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TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1831.

VOL. II.—No. I.

PUBLISHED BY ORDER OF THE SOCIETY—MARCH, 1832.

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AN

ADDRESS

TO

THE ESSEX AGRICULTURAL SOCIETY,

DELIVERED AT ANDOVER, MASSACHUSETTS,

29TH SEPT. 1831.

AT THEIR ANNUAL CATTLE SHOW.

BY HENRY COLMAN.

PUBLISHED AT THE REQUEST OF THE SOCIETY.

GAZETTE OFFICE.

1832.

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ADDRESS.

Mr. President ; and Gentlemen of the Agricultural Society ;

I am not insensible to the honor of your appointment on this occasion. I should not, however, have undertaken this duty, but from the consideration that every man is bound to render any practicable service, which the community demands of him. You do not expect an oration. Agriculture has little concern with rhetorical flourishes. Determined principles, plain matters of fact, and the results of well conducted experiments are most useful. These will be the subjects of my address.

I. The first object of a farmer should be to produce as much as he can. We are not speaking of mere amateur-farmers, who do not need the products of a farm as a means of subsistence or profit ; and who are at liberty to farm as much or as little as they please ; nor of your mongrel farmers, a sort of " jack-at-all-trades," who farm a little, and trade a little, and manufacture a little, and jockey a good deal ; but of those husbandmen, whose whole dependance is on their farms for their own and the support and comfort of their families. The object of such farmers should be to produce from their farms as much as they can, and of that which is most needed or most profitable. We lay this down as a great principle, and shall presently come to the qualifications which belong to it. Every man should obtain from his farm all that he can. This will require labor and care ; but the necessity of labor and care, where they are not excessive, is a blessing, not an evil. Occupation is enjoyment. Idleness is always hazardous to virtue, and renders a man a nuisance to his neighborhood. There is a satisfaction in a farmer's gains not to be found in many of the occupations of life. The increase of his products impoverishes no other man ; but confers a benefit upon the community by extending the means of human subsistence, rendering the land which he cultivates more

fertile, and inciting others to emulate his example of good husbandry.

There are three modes of increasing the produce of the soil, within the reach of every farmer;—draining, ploughing, and manuring. I can only glance at these topics, for it is not my intention to give a treatise on agriculture.

1. First, of draining. There are extensive tracts of low and wet land in the county, enriched by the decay of their own native growth, and the copious washings of centuries from the surrounding hills, which require only to be drained to produce, instead of a worthless herbage, the best of English hay and corn. In many cases, removing the water by open or covered drains, so formed as to cut off the springs at the sides of the meadow, is all that is necessary. In other cases the addition of some firmer substance, such as sand, or gravel, or loam, is needed to give it consistency. This in general is to be found in the neighborhood, and may be placed on the meadow at a season when such labor can be easily applied. In most cases the materials for manure obtained from the ditches, and the first or the two first crops will defray the expense of the improvement.* Sand contributes to the improvement of such lands by dividing the soil into fine parts, and rendering it favorable for cultivation, and the growth of the finer grasses; both sand and gravel serve to give it firmness; but probably the best mode of managing such meadows, after being well drained, would be to invert the sod, and after rolling to cover it with a coating of good loam, mixed well with manure, to the depth of about two inches; or to apply such a covering without inverting the sod, and to sow the grass seeds immediately upon this. Some lands have been

* A successful experiment of this kind has been made by Asa T. Newhall, of Lynnfield, where at least ten acres of a sunken and useless bog have been, at a moderate expense, brought into productive English mowing. He has furnished the Committee with ample details on the subject, which will be found appended to their Report on Reclaimed Meadows. An improvement of this sort is likewise to be found on the farm of Isaac Osgood, of Andover, where by good judgment and labor, meadows of some extent have been redeemed and made productive.

managed in this way with great advantage. A mistake is frequently made in the too copious application of sand or gravel to meadows. So much has been put on as to prevent in a great measure the benefits expected from it. Such applications do nothing towards enriching the soil; but are required only to aid in dividing, drying, and giving it firmness. Beyond what is required for these purposes, the application would be hurtful. The first object must be to lay these lands as dry as possible; and it suggests itself as an important improvement, where it is practicable, to erect a small embankment at the outlet of such meadow, with a sluice-way and gate, so that the meadow may be flooded at pleasure. Thousands of acres in this county admit of these improvements. They may be effected at an expense which, by their increased products, would be soon remunerated.

2. The next means of improving land is ploughing. We do not cultivate land enough; not nearly enough. Several farms in the county contain hundreds of acres, with not more than six or ten under the plough. This is not farming—this is only seeing how we can get along without farming; it is in fact going to sleep in the cart and leaving the cattle to find their own way. But the land, says the farmer, will not pay for cultivation;—there is some such; in general however most land will much more than pay for cultivation. But it costs labor; so does every thing else in life that is worth having. It requires manure; true! but cultivation is the great means of obtaining manure. Cultivation increases the products of the land. The more products, the more stock; the more stock, the more manure; and land in general, under generous cultivation and a frugal management of its products and manure, is capable not only of maintaining but increasing its own fertility. The great law of divine providence holds in this as in other cases, the more you do, the more you can do; to him that hath shall more be given. The late Col. Taylor of Virginia, one of the most distinguished farmers in the country, could at one time scarcely manure five acres of his land; but in eighteen years he so increased the products of his farm as to be able to manure one

hundred and fifty from the resources of the farm itself.* This improvement was chiefly effected by the extended cultivation of Indian corn and a most careful application of the fodder or offal.—Cultivate your farm to the extent of your power of manuring and keeping it clean ; and the power of manuring may by judicious management be increased to an almost indefinite extent. Land which, when it is manured, will not more than pay for the labor of cultivation, should be abandoned.

There is a material distinction between ploughing too much land and ploughing land too much. For garden-culture and tap-rooted vegetables the land cannot be in too fine tilth ; but for other crops it is not so important ; and the great object should be to preserve all the vegetable matter in the soil, that by fermentation and decomposition it may supply food to the growing plants. The common mode of ploughing green sward for example is to tear it in pieces in a rough and careless manner, to leave the sods loose on the surface, and then by harrowing to break them fine, and if possible, to bring all the grass and vegetable matter to the top to be exhaled by the sun and air—a more wasteful process cannot be pursued. Mr Phinney, an intelligent and practical cultivator in Lexington, Mass., had the curiosity to weigh the vegetable matter in a single foot of sward land, taken from a field, which had been mown for a number of years, the soil a light loam with a gravelly bottom, and thinly set with red top and herds grass ; and found it to contain nine ounces of vegetable matter consisting of the roots and tops of the grasses ; giving at this rate upwards of twelve and a quarter tons to the acre." This itself would be a very considerable manuring ; but this by the usual management is entirely lost. It is therefore of the last importance in breaking up land to turn the sod as completely as it can be turned, and at a season when there is the greatest quantity of vegetable matter on the surface ; to roll it that the air may be excluded ; and all the benefit of the decomposition of the vegetable matter retained in the soil ; and afterwards to cultivate the crop as far as possible without disturb-

* Albany Ag. Tracts, No. II. p. 56.

ing the sod. My own authority is of little importance in the case though I have for several years practised on this system and been satisfied of its utility; but in addition to the testimony of the gentleman referred to, whose opinions are entitled to great respect, you have the experience in its favor of two as eminent farmers as the country has produced, John Lorain of Pennsylvania, and Earl Stimson of New York, who have strongly recommended it.

The depth of ploughing and the number of ploughings to be given to land are to be determined by circumstances. Ploughing is too deep when it buries all the richer parts of the soil and brings to the top only a cold and gravelly substance, unless you have manure in such abundance that you can create a new vegetable surface. Frequent ploughing in heavy and tenacious soils is useful with this caution only that it must not be done when the land is wet. Frequent ploughing injures light soils by bringing all the vegetable matter contained in them to the surface to be exhausted by the sun and air. Ploughing among growing crops is often useful in time of drought. By some well conducted experiments of John C. Curwen, an accurate observer and intelligent farmer, with glasses contrived for the purpose to ascertain the quantity of evaporation from the land, it was found to amount on the fresh ploughed ground to nine hundred and fifty pounds per hour on the surface of a statute acre, whilst on the ground unbroken, though the glass stood repeatedly for two hours at a time, there was not the least cloud upon it, which proved that no moisture then arose from the earth. The evaporation from the ploughed land was found to decrease rapidly after the first and second day and ceased after five or six days, depending on the wind and sun. These experiments were carried on for many months. The evaporation after the most abundant rains was not advanced beyond what the earth afforded on being fresh turned up."*

Few operations of husbandry among us are executed, in general, in a more slovenly way than ploughing.—The half-

* Curwen's Hints, p. 273.

finished manner in which the sod is turned, the frequent baulks, the ragged and uneven ends of the fields, and the utter disregard of all straight lines, show the importance of our ploughing matches, which it is hoped, with the introduction of better constructed ploughs, will eventually correct these habits and introduce neatness, care and regularity, as convenient and useful in saving labor as they are agreeable in the appearance.

3. I proceed to the third operation upon the land, manuring. Manure is the great means of all successful agriculture. My remarks on this as on other topics must be brief; and will relate to matters which are not generally considered rather than to those which are familiar.

The first means of enriching the soil is that to which we have referred, that of ploughing in the vegetable matter, already on the surface. Late ploughing in the spring is doubtless preferable to early, by which means you have the advantage of the early growth of the grass.—Ploughing-in green crops, which were sowed expressly for this purpose, is another mode of enriching land, successfully tried, and warmly recommended by some persons, but it is little known among us.* It is objected by many persons that in this way you return to the land no more than what is taken from it; this would be true, if it were not that plants derive much of their support and growth from the atmosphere. Another object with every farmer, should be his compost heap. Nothing, which is susceptible of decay and so of forming manure, should be lost. There are few farms among us, which do not contain upon themselves, either by the roadside or in their meadows and swamps, the materials for forming compost manure in great abundance; and farmers will permit me to remind them that the summer and autumn are the best seasons for making this provision. The saving of liquid manure

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* The Mass. Agricultural Society the last year gave a premium to Wm. Buckminster of Framingham for a successful experiment in turning in two crops of Buck Wheat to the acre, greatly to the improvement of his land. The account is given in their Repository for 1831, Vol. X. No. III.

upon our farms is little attended to. Universally in Flanders, one of the best agricultural countries in Europe, water-tight vaults are constructed under all their stables, and their liquid manure is considered of as much or greater value than their solid manure. Such a practice among us would be of great utility; and by constructing cisterns under our stables to be filled with mud or loam, and by littering our cattle abundantly, this valuable manure which is now lost, might be turned to the best account. But the great means of obtaining manure is from consuming our produce upon the place in the form of hay or vegetables. Where this can be done, and to the extent to which it can be done, we may be sure of the means of increasing the fertility of our farms. Here we come back again to the great circle of reciprocity and mutual connexion and benefit. Increasing your products will enable you to increase your stock;—increasing your stock will increase your manure; increasing your manure will help you to increase your cultivation; increasing your cultivation will increase your products. This is the golden chain of comfort and wealth, which Divine Providence has formed, every link of which is essential to the perfection of the whole. I will remark in passing upon the application of manure. It is the opinion of many farmers that it is better to keep their stable dung until it is a year old and becomes thoroughly rotted. But this practice is condemned by the fullest experiments. Animal manure cannot be applied to the land in too fresh a state, though it would often be beneficial to mix it with other substances. "By fermentation," says Curwen, a practical farmer already quoted, "dung is reduced to one half its bulk and its quality is reduced in greater proportion. The evaporation from dung is five times as much as from earth and is equal on the surface of an acre to 5000 pounds per hour, and this is losing its most valuable gases. By making use of dung in its freshest state, the farmer may extend his cropping to one third more land with the same quantity of manure." "The experiments of Arthur Young and other practical and scientific farmers have demonstrated," says Judge Buel, as competent an authority as I can quote, "that animal and vegetable manures,

which undergo a complete process of fermentation in the cattle yard or upon the surface of the ground, lose from 30 to 60 per cent of their fertilizing properties, and if properly spread and buried under the soil that this loss is prevented and that a decomposition does immediately take place even of dry straw sufficient to answer valuable purposes to the first crop." "Experiments show," says Mr. Young, "that every atom of vegetable matter in the soil begins to be decomposed immediately and to want no previous fermentation to enable it to feed plants." The application of fresh stable manures cannot properly be made to crops of small grain because they tend to increase too much the haulm or stalks of the plant and expose it to rot and mildew; and because the seeds of weeds will in this way be carried into the fields; but such manures may be most properly applied to hoed crops and in a sufficient quantity to prepare the ground without further applications for a crop of small grain.

II. The second great topic to which I ask your attention is the consumption of the produce upon the farm. This should be the object of every farmer. He should produce as much as he can and he should strive so to use up his produce upon his place as to have the means of increasing its productiveness.—This suggests two topics of inquiry; the kind of crops to be raised and the mode of applying them.

1. English Hay is considered among us as the great crop. The average yield cannot be rated at more than one ton and a half to the acre; a ton in the opinion of many farmers would be a more accurate estimate. This, at the prices which it has borne for several years past, can hardly be considered a valuable crop. It is the crop on which most of our farmers in the neighborhood of large towns depend for obtaining ready money. But the sale of hay from a farm is subject to serious abatements.—For every ton of hay sold from the farm, in order to preserve its fertility the farmer should return a cord of manure. This delivered at the farm cannot be rated at less than two dollars. To this you are to add the expense of marketing the hay, which in any situation is at least a dollar. A ton of hay then con-

sumed on the farm is worth three dollars more than if sold from the place; i. e. if it bring only ten dollars in the market and by any mode of consuming it upon his place the farmer can realize that amount from it at home, he may consider it as better worth thirteen dollars on the farm than ten dollars carried from the place; or to state the case differently, it is better for the farmer to use it at home if he can there make it worth seven dollars per ton to him than to convey it any considerable distance to market and obtain ten for it. At this rate, however, and I can see no fallacy in the calculation, hay at present prices and yielding one or one and a half ton to the acre is not a profitable crop. Indeed, unless where there are extraordinary resources for obtaining manure, such as on the sea shore or in the vicinity of bog mud, the sale of hay must be considered as a wasteful kind of husbandry. It is properly speaking, in many cases, killing the hen that lays the golden egg.

Next let us compare the value of hay with other crops for the feeding of stock. An acre of hay yields one ton and a half of vegetable food; an acre of carrots or Swedish turnips will yield from ten to twenty tons; say fifteen tons, which is by no means an exaggerated estimate. Crops at the rate of twenty-five tons of carrots, and twenty-two of Swedish turnips to the acre have been raised among us, and much larger crops than these are upon record.

By an experiment it has been ascertained that three working horses fifteen and a half hands high consumed at the rate of two hundred and twenty four pounds of hay per week, or five tons one thousand five hundred and forty eight pounds of hay per year, besides twelve gallons of oats each per week or seventy eight bushels by the year. An unworked horse consumed at the rate of four and one quarter tons of hay by the year. The produce therefore of nearly six acres of land in this mode of feeding is necessary to support a working horse by the year; but half an acre of carrots at six hundred bushels to the acre with the addition of chopped straw will, while the season for their use lasts, do it as well if not better. These things do not admit of doubt; they have been subjects of accurate trial.

It is believed that the value of a bushel of Indian Corn in straw and meal will keep a healthy horse in good condition for work a week. An acre of Indian Corn, which yields sixty bushels, will be ample for the support of a horse through the year. Now it is for the farmer to consider, whether it be better to maintain his horse upon the produce of half an acre of carrots, which can be cultivated at an expense not greatly exceeding the expense of half an acre of potatoes, or upon half an acre of ruta baga, which can be raised as a second crop at a less expense than potatoes, or upon the grain produce of an acre of Indian Corn, or, on the other hand, upon the produce of six acres in hay and grain; for six acres will hardly do more than to yield nearly six tons of hay and seventy eight bushels of oats. The same economy might be as successfully introduced into the feeding of our neat cattle. I have known a yoke of oxen engaged in the ordinary labor of a farm, to be kept three months in winter in good working condition upon one bushel of Indian meal and about twenty five cents worth of straw per week; and my own team has never been in better condition both for appearance and labor than when fed wholly upon a liberal supply of ruta baga and the coarsest fodder. But it has been ascertained by accurate measurement that an unworked ox put up on good old hay consumed at the rate of thirty three pounds per day or two hundred and thirty one pounds per week, which is upwards of six tons per year of two thousand pounds to the ton. There must then be a great saving between feeding in the way referred to or upon English hay; and English hay alone in any quantity without grain or vegetables is not sufficient for any hard working animal.

We come next to the great article of produce, the Prince of Vegetables, the bread fruit of our climate, Indian Corn. In an agricultural view that country is signally blessed, which has the capacity of producing Indian Corn. There is no crop of more simple and easy cultivation. None is subject to fewer casualties; only in a single instance for many years (the year 1816,) has the crop among us been generally cut off. There is none that yields a greater quantity of feed, or of better feed to man

and beast; which will make more flesh; which returns so much to the land; and bears more frequent planting upon the same ground.

Crops, exceeding one hundred bushels to an acre, have been raised in this county. No farmer ought to be satisfied with a less crop than fifty bushels to the acre; and, while pork is worth six cents a pound, he may estimate his corn as equal to seventy cents per bushel. Fifty bushels to the acre then may be safely valued at thirty five dollars; and the fodder from an acre of corn if well saved will do much towards paying for the labor of cultivation. It will do more when carefully managed, than any other crop, toward supplying its own manure. I do not speak at random. Mr. W. P. Livingston, of New York, gives it as his opinion that the fodder will pay for the cultivation. Lorain of Pennsylvania obtained from an acre yielding sixty six bushels to the acre, (and the ground was planted with potatoes as well as corn,) of

	Ton.	*Cwt.*	*lbs.*	
Blades, husks and tops,	1	6	13	
Stalks or butts	1	7	00	
Total	2	13	13	gross.*

Mr. Phillips, an intelligent farmer of Pennsylvania, says, "that he is fully of opinion, that a field of good corn will yield as much fodder and contain as much nutriment as a field of the best clover of equal size."†

The saving of corn fodder ought to be much more matter of attention than it is. It is a slovenly and wasteful practice to leave our corn butts in the field to be browsed by cattle and so to serve no use as manure rather than carefully to gather and feed them out in winter in our barn yards, where what is not consumed by the stock, will go at once to increase the compost heap.

Of potatoes as a profitable crop I have great distrust. Beyond what is wanted for marketing or family use they afford

* Lorain's Husbandry, p. 201. † N. Y. Memoirs, vol. III. p. 374.

small returns. One hundred and fifty bushels to the acre is more than an average crop throughout this county. These can hardly be rated on the farm at more than one shilling per bushel, which would be equal to twenty-five dollars, out of which the expense of four or five dollars for seed is to be deducted. For feeding beef stock it is doubtful if they should be rated so high. I have made no experiments with them in this way upon which I can rely. When steamed they are represented as excellent feed for horses. Many persons speak well of them in fattening beef; but the best grazing counties in the State do not deem them a very profitable object of culture. "To mix potatoes in the food of fattening pigs," says an English agriculturalist, "is deceptious, deteriorating the pork in exact proportion. Hence the Irish pork and bacon are generally inferior to the English, and the market price is in proportion. The inferiority was some years since stated at three ounces per pound or upwards by an eminent dealer in Irish provisions."* But after deducting the expense of seed, the labor of manuring, planting, hoeing, and gathering, which is always a troublesome business, the profits of such cultivation must be very small. They likewise return little to the ground, for the tops of potatoes can scarcely be considered as of any value.

Carrots are a more profitable crop than potatoes. This crop is of great value. "A bushel of carrots, for any stock, is equal to two-thirds of a bushel of potatoes, or of equal value weight for weight." It is little more expensive to raise six hundred bushels of carrots than two hundred of potatoes. Again, land which will produce fifty bushels of corn to the acre, will produce six hundred bushels of carrots, or twelve for one; and a New-York farmer by the name of Waring says that "two and a half or at most three bushels of carrots will make as much beef, pork, mutton, milk, or horse flesh as one bushel of corn. This seems to be an extravagant estimate; but if they will do half as much the advantage is greatly in favor of carrots.

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* British Farmers' Magazine, Vol. I. p. 594.

Of the value of English turnips I shall not say much. They are very easily raised. Cattle and sheep are very fond of them, and will thrive upon them. In Great Britain many of their cattle are entirely fattened upon them, and English beef is celebrated all over the world. Upwards of eleven hundred bushels have been raised to an acre by Mr. Featherstonhaugh of New-York, and premiums have been given in Scotland to crops of seventy-five and ninety-six tons to the Scotch acre, which is one fourth larger than ours. As a second crop they may be raised to great advantage.

The Ruta Baga is a highly valuable crop. I have raised nine hundred bushels to the acre at a less expense than the same extent of potatoes could be cultivated, and four hundred and six hundred bushels have been produced on sward land from which a crop of grass has been taken the same season. A crop of four hundred bushels to the acre was raised on a grass ley and sowed on the 18th of July; but I am inclined to believe that the best mode of culture is to raise the plants in a seed bed and transplant them either with a short stick or by running a single furrow at the distance at which it is desired the rows should be made, dropping the plants on the land side of the furrow and letting a man follow to set them up and draw the earth to them with a hoe. Where they are transplanted a much longer season is obtained, as this need not take place until the last of July or even as late as the middle of August.

They are said to be excellent food for horses; and, when steamed, valuable for swine. I know them to be of great value for oxen and all dry stock; and for cows, abating an unpleasant taste which they give to the milk; and both carrots and ruta baga may be applied with great advantage to the feeding of sheep intended for the butcher. The manure which is made from sheep or cattle fed on turnips, with their yards well littered, from the extraordinary secretions of urine which turnips produce, is of a superior quality. The value of carrots for milch cows is well understood, not increasing the quantity of milk so much as potatoes; but giving it richness and sweetness, and contributing to keep the animals in the best condition.

It is my conviction therefore that on the extended cultivation of Indian Corn, Carrots and Ruta Baga, the Essex farmer may lay the foundation of a profitable husbandry. Of the cultivation of other crops and particularly of the smaller grains, wheat, barley, and rye, I have not time to speak. In respect to wheat, much of our land is unfavorable, probably from a deficiency of lime; and this might be remedied by the application of lime to the soil either in a crude or composite state, as it exists for example in the spent leeches of soap boilers. The prejudice generally entertained that the vicinity of barberry bushes will occasion a blast of the grain, deserves farther inquiry; as I have for the two last years had sound crops of wheat directly in their neighborhood.

2. I propose next to speak of the application of the produce of the farm.

The raising of Live Stock cannot be pursued to any great extent by the Essex farmer. The scantiness of our pastures forbids it. Yet in a small degree by producing large crops of succulent vegetables, by a careful saving of his corn-fodder and straw, and by sending his young animals to another part of the country for pasture in summer, he may at least keep his stock good and often go beyond this with advantage. Every farmer should have young stock sufficient to consume his coarse fodder; and he can often purchase stock brought from the interior at a low rate, the growth of which in this way will be more than an equivalent for their feed.

The Dairy is another object with the Essex farmer. Butter and cheese always find a ready market in the towns and villages, which are accessible to every part of the county. It should be an object with him to extend this part of his husbandry as much as possible, and to obtain a milking stock of the best qualities. This requires that his animals should be well kept. The produce of a cow in the summer will be materially affected by the manner in which she has been kept in the winter; and our scanty pastures may be greatly assisted by clearing up, draining, and the application of ashes to the surface; besides which we should find great advantage in the cultivation of green summer

feed for our cows, such as Indian corn sown for this purpose, and especially Lucerne, which bids fair to become a valuable auxiliary to our dairy husbandry.—Essex county has the honor of having possessed some cows, whose produce has scarcely been exceeded; but we are certainly deficient in attention to the good quality of our milking stock, and from ignorance or indolence keep animals which are comparatively worthless. In a comparison of the quality of the milk of two of my own cows, in order to ascertain the proportion of cream given by each, I found in milk taken on the same day and in the same quantity and allowed to stand in the same place for the same length of time, an extraordinary difference, the milk of one giving only two tenths of an inch of cream and the other giving an inch and three tenths; and yet this inferior cow was most promising in appearance, and the most expensive cow in the yard.

Essex county has one small dairy, which presents a fine example of successful management in this branch of husbandry, not exceeded by any within my inquiries. I refer to the dairy of Mr. Jesse Curtis of Marblehead, all of native cows and most of them raised by himself.

In 1824	from	6½*	cows	he made	732	lbs. of butter.
1825		7	"	"	886	" "
1826		6	"	"	745	" "
1827		6¾	"	"	836	" "
1828		8	"	"	1272	" "
1829		7	"	"	1175	" "
1830		6	"	"	1090	" 13 oz. "

which last yield is at the rate of one hundred and eighty-one pounds to a cow, and this without any extra feed.

The next mode of consuming your produce on the place is by stall-feeding sheep, to be put up in autumn and turned off to the butcher in the spring. My own experiments in this way, though conducted under many disadvantages, have been favorable to its continuance, since it has furnished a home market for my produce at the current rates, without the trouble and loss of carrying it from the farm; and the manure has been an equivalent

* One cow for half the season.

for the attendance. To stock of this description, carrots, ruta baga and common turnips are a valuable feed, and for this purpose may be raised to advantage. Mutton fattened in the immediate vicinity certainly deserves and will command the preference with the butchers over that which is driven a great distance, or which is brought down in a half frozen state.

Pork is another article, which even at the present low prices, may, I believe, be fattened without loss and perhaps to a very small profit; at least it furnishes a market for our produce without the trouble and expense of carrying it from the farm and leaves a valuable manure for its benefit. I need not say any thing of the important differences in the breeds of swine. Some will scarcely repay the trouble of attendance, while from an improved stock I have had a gain for weeks and months together of two pounds, two and a quarter pounds, three pounds and three and a half pounds per day. Cooked food for swine is greatly to be preferred to raw food; Indian meal is more fattening than any other feed; the growth of the first year is a much greater gain than that of any subsequent period; and I believe it is best to keep them from the first not merely in a growing but in as fat a state as we can get them.

In regard to the fattening of Beef animals, my experience has been little and that by no means encouraging. In a single experiment where an exact account was kept, it was attended with a great loss, as in general the profits in such cases go to the butcher. I have wished to make further trials; and I would express the hope that a Society, distinguished for the judicious selection of its subjects of premium, will deem it of particular importance to encourage various and exact experiments, to determine what may be profitably done in this way, and to devise other successful modes of consuming the produce of a farm so that what is carried away may not impoverish it.

Next to the importance of cooking feed for swine, and I believe it would be found of almost equal advantage for all other animals, is the cutting up of all long feed for neat cattle and horses. My own experience has been considerable in this way, and always strongly in its favor; so has that of many other persons within my knowledge; but I shall refer

you only to the testimony of a Mr. Phillips, of Pennsylvania. He says, "I have fixed a moveable shaft upon the top of my cider mill, on which is a large drum; and with another small drum connected by a strap, the chaff cutter is worked by one horse, the fodder is cut of any size from one quarter to an inch long, and with ease from 120 to 140 bushels an hour are turned out, one boy only attending the machine. Since I have used fodder thus prepared, I have kept from twenty-six to thirty-five head of cattle, besides horses and sheep, during the winter, and have used at least ten loads of hay less than when I kept only twelve. This spring (1824) my cattle were in better order than usual."*

I owe an apology to the society for detailing my own experience and so often speaking in the first person. It would be affectation in me to pretend ignorance of an art in which I have been more or less interested and occupied for many years, and with a strong feeling of its great and essential importance to human comfort and good morals; but I am not unaware that I stand in the presence of many of much more experience and knowledge than myself; and in speaking of what I have done I am prompted by a feeling of the duty of every farmer to communicate to his brethren the results of his own experiments, whether favorable or otherwise, as the best means of advancing an art, where facts and experience are the safest instructers.

There were other topics upon which it was my wish to have remarked; but I fear I have already trespassed too much upon your patience. Agriculture cannot be looked to as a source of wealth; but money is far from being one of the greatest goods in life. Its profits under the most favored circumstances must be small and can only be secured by hard labor, persevering industry, and extreme frugality. Yet the situation of every sober and diligent farmer in our country may always be one of substantial independence. A comfortable dwelling, a sufficiency

* Memoirs of N. Y. Agriculture, vol. III. p. 374.—[I have myself tried various cutting machines; where much work is to be done, I can strongly recommend the machines invented and patented by Jonathan Eastman of Baltimore, which are now made in Boston, as the best within my knowledge.]

of wholesome food and good clothing, the means of rearing a family, the opportunity of procuring the best education for his children, the power of gradually improving his property and condition, and of accumulating some humble resources against the time of old age and sickness, and above all the quiet and comforts and endearments of home, and the perfect enjoyment of his religious rights and privileges, are blessings as much within the reach of the industrious and honest farmer in New England as of the richest man in the world, and are sufficient to satisfy any but an inordinate avarice and ambition. The farmer's gains are honest gains. What he gets, he gets not at the expense of suffering or loss to others, but as the lawful fruits of his own industry and toil. He above all others should be a religious man; for the fruits which he gathers seem to be poured at once into his lap from the divine bounty; and the various domestic animals, which depend on his care and are to be daily fed from his hand, remind him that he is the almoner of a merciful and kind Providence. Every operation of husbandry, with all its beautiful and miraculous results, admonishes the thoughtful mind of that unseen but omnipresent and beneficent agency on which all creatures subsist; and which is every where diffusing life and happiness and good. The flowers of the field in their splendor and beauty, the birds of the air, who, though they have neither store-house nor barn, are fed by a paternal kindness, the invigorating sunshine and the fertilizing rain, the fields glistening with the enriching dew or yellow with the ripened harvest, and the cattle upon a thousand hills, all speak to the husbandman, of God, in tones which find their way at once to the feeling and pious bosom. Let his heart and life pour forth a grateful response. In the exercise of an honest industry, who can feel a juster claim to the peaceful enjoyment of its bountiful returns! The possession of these gifts of the divine goodness should remind him of his duty to those whom it gives him the power and privilege to succor and relieve. When the peace and contentment and comfort, which reign in his habitation, are thus enjoyed in charity to his fellow men and in humble piety to God, this earth presents no condition more privileged and enviable.

REPORTS.

No. I. ON FARMS.

The Committee of the Essex Agricultural Society, on Farms, ask leave to report—

That there were three applications for the Premiums of the Society for the good management of Farms, from the following individuals:

Mathew Hooper, of Danvers.
Jesse Curtis, of Marblehead.
Jedediah H. Barker, of Andover.

The farms of these several gentlemen, were visited by your Committee in June and September; their respective accounts of their condition, cultivation, and produce, are subjoined to this report; and will be read, your Committee believe, certainly in respect to two of them, with interest and pleasure, as affording laudable examples of frugal and successful husbandry, and of industry and skill well, intelligently, and honorably applied.

The farming of Essex County is of necessity on a comparatively small scale. It contains no large plantations; and no abundant capitals to be applied to agriculture. Essex is essentially a maritime County. Commerce and Manufactures are the great and absorbing pursuits. A large proportion of our population are mechanics and manufacturers, and choose those occupations where the cash returns are liberal and quick. Many among us, it must be allowed, are living upon their wits, and in many instances excite our surprise at the profits they realize

upon so small a capital. They prefer speculating in stock to raising stock, and are more disposed to fleece the farmer than to fleece the sheep. In a luxurious community it is natural to expect an aversion to labor; and where wealth becomes with all classes the paramount object, it is a matter of course that the small and humble gains of the farmer should be looked upon with indifference if not disgust; and a profession disdained, which however honest and satisfactory its gains may be to a humble mind, holds out no golden promises either to avarice or ambition.

The circumstances of our County likewise forbid our engaging in the production of any great staple. We can grow neither Wheat, nor Indian Corn, nor Hemp, nor Tobacco, nor raise Live Stock,—nor fatten Beef or Pork extensively. We are favored with numerous markets in the County and its vicinity; and yet there is scarcely an article, which we can produce, with which there does not come into immediate and strong competition the same article from some more favored clime. The products of the rich alluvions of the West, and the new lands of our Eastern neighbors, pouring in upon us in every direction by their numerous rivers, canals, and railways, have essentially injured our own agriculture, and diminished to an extraordinary degree the value of our lands. These circumstances, together with the increased price of labor owing to the demand for it in manufacturing establishments, or the lessening of the number of hands by emigration and commerce, very much cripple our agriculture; and put those among us, who with their families must either live or die upon their land, to their wits' end, to know how to support themselves and obtain even a humble remuneration for their labor; compel them to raise whatever will sell, and to sell whatever others will buy; and, like retail merchants, to keep a variety to suit the wants of the various customers to whom they may have access. These circumstances make our farming appear to men accustomed to agriculture on a large scale a small business; and in many cases forbid men to make it an exclusive pursuit and compel them to unite with their farming, that they may find the means to live, the laboring on hire for others, or the practice of some mechanical trade. It will not be denied on the

other hand that these peculiar circumstances are in many respects favorable to the character of our agricultural population. They compel them to diligence, frugality, and temperance; they severely tax their industry and skill; they as it were throw them upon their own resources; under these circumstances their energies are naturally developed, and habits of extraordinary diligence and frugality are formed, as being absolutely essential to success.

The farms of Messrs. Hooper and Curtis are fair examples of this kind of husbandry, and entitle them to the honorable notice of your Society. Mr. Hooper's farm is in Danvers, owned in part by himself, but the greater part held on a lease. We need not recapitulate the facts communicated in his statement; but we begin by saying that an example of neater husbandry, both within doors and without, we believe cannot be found in the County. Every thing connected with his mechanical and agricultural establishment was in order, and his numerous inventions for facilitating and abridging the operations of his trade and farm deserve great commendation for the ingenuity of their contrivance, as well as the success of their application. His buildings and fences were in complete repair; his cultivation clean and thorough; his domestic animals of good character and in good condition; and every part of the concern indicated the attention of a vigilant and careful master. The crops of Indian Corn and Potatoes were very good for this part of the country, though the year upon the whole has been unfavorable to the yield of Potatoes. The blight upon small grains, Wheat and Rye, from which he suffered, was general; but the appearance of Mr. Hooper's fields after the crops were removed, showed the high condition in which the land had been put. The amount of dairy produce is to be considered with reference to the large number of the family to be supplied with milk, and for this purpose it would seem that at least a third part would be required. The crop of Hay was got in fine condition; the other crops of onions and carrots especially were very good for field cultivation; and the gross amount of produce, which there is reason to believe was under rather than over-stated, is highly creditable.

Your Committee remarked with satisfaction Mr. Hooper's practice of planting at intervals among his corn several rows of potatoes, so as to afford a place for shocking his stalks and removing them at pleasure, without the necessity of carrying them by hand to a great distance where the field was large, or exposing his corn to be broken down by going among it to bring them out, when they should be fit to be carried to the barn. Your Committee likewise remarked with great pleasure Mr. Hooper's unusual attention and economical arrangements for making and saving manure; and strongly recommend his example to their brother farmers. Manure must lay at the foundation of all successful husbandry; and it is impossible to condemn too severely the apathy and negligence in this matter, which generally prevail.

Mr. Hooper, holding a large portion of his farm on a lease, has little encouragement to attempt any laborious or expensive improvements. His several manufactures afford him singular advantages in obtaining for his farming operations any additional labor which may be required on an emergency and in the busiest season of the year; and from the connexion of his mechanical and farming operations your Committee felt the difficulty, admitted by Mr. Hooper, of making a just estimate of the amount of farm labor employed, and comparing it with the land cultivated and the produce raised.

The farm of Jesse Curtis is in Marblehead, and is held on a lease of seven years, five of which have expired. Under a landlord indisposed to allow any compensation for improvements, Mr. Curtis has had no encouragement to make any; yet he has done much by his humble means to mend the condition of his place, and his fields and buildings are in neat and good order. His pasturage is excellent; and his arable and mowing land, where it is to be found among the rocks and cliffs, is of a superior quality. His opportunities for procuring sea manure are very good; but with all these advantages, the amount of his produce compared with the labor expended, and indeed the general condition of his premises, showed that his labor was judiciously applied, and indicated industry and good management. His stock,

particularly his cows, most of which have been raised by himself, is of an excellent quality; and his dairy, for the exemplary neatness of its management and its amount of produce, is certainly not surpassed and scarcely equalled by any within the knowledge of your Committee, his cows within the present season without any extra feeding having yielded more than 169 lbs. of butter to a cow. Mr. Curtis' farming is on a comparatively small scale; his means are very limited; he is exclusively a farmer; and his husbandry affords a creditable example of economy, neatness, and well-directed industry.

Your Committee being of an opinion that their highest premium should be bestowed only in a case where farming is the exclusive object of pursuit, and pursued on a scale so extensive as to embrace all the most important branches of husbandry, and at the same time to present examples of experiments and improvements in agriculture, did not feel at liberty in either of the above cases to bestow it; and experiencing some difficulty in fairly adjusting the respective claims of these two competitors so as to give a preference to either, they decided unanimously against making any distinction between them, and voted therefore to divide the second and third premiums equally between the two claimants; which they accordingly recommend to the Society.

Your Committee visited the farm of Jedediah H. Barker, in North Andover. Feeling no disposition to censure, they owe it to themselves not to commend without just grounds of commendation. The condition of Mr. Barker's working cattle did him much credit; in other respects your Committee saw nothing in his husbandry, differing from the management of the majority of the farmers in the county, or which should in any respect entitle him to a preference over them. His returns are made with little exactness; but it is obvious that the amount of labor employed and produce obtained are small compared with the size and capabilities of his farm. It presents one of those cases too frequently to be met with, and based upon a mistaken economy, in which an attempt seems to be made to ascertain with how little labor the farm can be got along, rather than how much

labor can be profitably applied; an error obviously incompatible with intelligent, productive and improving husbandry.

Your Committee, anxious to encourage applications for these premiums, deeming the actual exhibition of the management of particular farms one of the best modes of promoting agricultural improvement, have by a majority thought proper to award to Mr. Barker the seventh premium and accordingly recommend this result to the society; and they beg to state that they are strongly induced to this by the above consideration and the good condition of his working stock.

Your Committee have great pleasure in stating that at the hospitable invitation of Dr. Joseph Kittredge of Andover, one of their own body, they had the satisfaction of going over his grounds; and without asking his consent, they unite in their commendation of his husbandry; the neat and improved condition of his trees, fields, general cultivation and live stock; and in thanking him for the essential aid he renders to agricultural improvement by such an example.

Your Committee in closing their report unite in the conviction that the agriculture of the county is in a course of gradual improvement. They regret the small number of applications for the liberal premiums of the Society on the management of Farms; in the firm persuasion, as before stated, that no class of premiums is better adapted to promote the objects of the Society; that there is no means of agricultural improvement more efficient than that of bringing the details of individual husbandry directly before the individual himself and the agricultural public; and placing the management of different farms in direct comparison with each other. It is a false and pernicious diffidence, which, on the part of many individuals, prevents an application for these premiums; and which, to the regret of the Committee, withholds, in their opinion, many of the best managed farms in the county from observation.

Your Committee beg leave to press strongly upon the attention of their brother farmers, what still appear to be the prominent defects and faults of their husbandry; the little exactness observed in their operations; the gross neglect of farming accounts

and journals, by which the actual results of their husbandry might be determined and recorded; the small attention paid to the preservation and the increase of manure; the great loss of animal labor to which almost every farmer subjects himself either by keeping more team than he can advantageously employ or suffering it much of the time to remain idle; the little amount of human labor expended compared to the extent of the farm, where much more might be profitably applied; the fewness of the attempts either at draining or irrigation; the neglect of providing succulent vegetable food for the winter keeping of our live stock; and lastly the slovenly and severe manner in which much of our valuable stock is carried through the winter, so as in many cases barely to sustain life.

Your Committee have no pleasure in dwelling on the defects or faults of their brethren; but they will find an ample justification for the performance of this ungrateful duty, if they can stimulate and increase the spirit of improvement every where active among us and in the highest measure useful and important to the industrious and intelligent agricultural population of the county.

Moses Newell,
Henry Colman,
Joseph Kittredge,
John W. Proctor,
Paul Kent,
Elias Putnam,
Hector Coffin,

Committee on Farms.

January, 1832.

MATTHEW HOOPER'S STATEMENT.

TO THE COMMITTEE ON FARMS.

Gentlemen—

I submit for your consideration such a statement of the management and produce of my farm, as is in my power to make;—not having heretofore noticed particularly the princi-

ples upon which your premiums were offered, I have not been so particular in ascertaining facts, as I should have been, had I known what was required.

The farm under my care includes about one hundred and forty acres of land—forty acres belonging to myself—one hundred acres held under a lease from the heirs of the late Benajah Collins, Esq. It is situate near the centre of the town of Danvers, at the head of Waters river. The soil is generally good, and there is no waste land. The present year, I mowed about sixty acres, pastured about fifty acres, and cultivated about twenty-five acres. The same farm has been under my care for the last eight years.

The produce the present year, I estimate as follows :—

English hay	35	tons.
Low ground hay (of good quality)	35	tons.
Salt hay	1½	tons.
Indian Corn	650	bushels.
Potatoes	450	bushels.
Cider	2½	barrels.
Pork	2000	lbs.
Beef	5000	lbs.
Wheat	14½	bushels.
Rye	15	bushels.
Oats	85	bushels.
Butter, from April 2 to Nov. 24	603	lbs.
Cheese, new milk	440	lbs.
Onions, 3 acres	900	bushels.
Carrots, 1 acre	15	tons.
Squashes	2	tons.

Our number of cows have varied from six to ten in different parts of the season. Our family has usually consisted of from ten to fifteen persons, which together with another family of eight persons, have been supplied with milk from our dairy—which has necessarily diminished the quantity of butter and cheese.

My corn was principally raised on land that has been pastured the last thirty years; the produce varied from thirty-five to fifty-

five bushels to the acre. The average produce of all my land planted with corn will equal forty-five bushels to the acre.

My crops of onions and carrots were cultivated and taken care of by one of my neighbors on shares—he receiving a certain proportion of the crop for his labor in attending to the same. This field of nine and a half acres, that was taken care of upon shares—myself finding manure, and receiving my part of the produce on the field—has yielded me, after allowing all charges, an income of at least fifteen dollars an acre.

I sowed three acres of wheat, and three acres of rye, on land in a fine state of cultivation; but on account of the blight generally prevalent in this vicinity the present season, the produce was very small, scarcely sufficient to pay for the labor of gathering and cleansing. We afterwards mowed on the same land, a crop of nearly a ton to the acre, of tolerable fodder for the cattle.

My oats were of very good quality, and yielded twenty-five bushels to the acre.

In addition to the crops before stated, we raised as many vegetables as were required for the supply of the family.

Manure.—I have paid much attention to increasing the quantity of manure on my place. I obtain from my barn yard, from seventy-five to one hundred loads annually; and from my pig pens, as much or more than from the barn yard;—so that the manure produced on my place is not less than one hundred and fifty cart loads annually. In addition to this I purchased the last year forty cords of lead factory manure, for which I paid one dollar a cord—and in years previous I have usually purchased some manure, though not so much as the last year.

My own attention is much divided between my farming and other business. I am a carpenter, and usually have two or more hands beside myself engaged in this business.

I have a Brick Yard on my place, in which I manufactured between two hundred and fifty and two hundred and sixty thousand of bricks the present year—the labor in the same is done at so much per thousand—all the rest of the care of the same devolves upon me.

In addition to the stock before mentioned, we keep usually three yoke of oxen—and three horses.

In regard to the quantity of labor exclusively applied to my farm, it is not in my power to state with precision—the same persons being employed in different parts of my business, as I find most advantageous.

From the first of April to the first of December, I estimate there are engaged in farming on an average, four men and two boys—the average price for men's labor during this time is eleven dollars a month—the boys, one is ten the other fourteen years old—not hired.

In the house we usually hire two girls through the season.

That part of the land which I hire, is so situated that I am not at liberty to vary its condition, or to attempt improvements upon it. That which I own has been cultivated for a long time, and is in so good a condition as not to require any experiments for bettering the same. MATTHEW HOOPER.

JESSE CURTIS' STATEMENT.

TO THE TRUSTEES OF THE ESSEX AGRICULTURAL SOCIETY.

Gentlemen—

I subjoin some account of my farm. Not expecting until very late in the season to offer it for examination to the Committee, I am not able to supply as exactly as I could wish, all the details which might be desired.

The farm which I occupy is in Marblehead, and is held by me upon a lease of seven years; as no consideration is made by the landlord for improvements, I have been unable to do in this respect what I could wish. The farm is in much better condition than when I received it; but it must be my principal object to turn every thing as far, and with as little expense as possible, to immediate account.

The farm contains ninety-five acres. It is is situated at the North part of Marblehead, and is washed on the North-eastern

side by Salem harbor. Here and at Marblehead Neck, there are often great advantages for procuring sea manure.

The pasturing is permanent, as it is for the greater part too rocky to admit of being ploughed. The feed which it produces however is of the best quality, and it is not liable to suffer much from the drought. It is divided for the present season as follows.

In Pasture,	61	acres,
" Mowing,	27	"
" Tillage,	6	"

Of the Tillage 3 acres have been in Indian corn, 2½ acres in potatoes, and ½ acre in other vegetables.

The produce of the farm the current year is as follows :—

English hay, (much of the best and all of good quality)	49	tons.
Rowen	8	tons.
Meadow or Swale hay	1	ton.
Corn	159½	bushels.
White beans	47	bushels.
Peas (in pod)	6	bushels.
Beans (")	3	bushels.
Flat turnips	40	bushels.
Potatoes	175	bushels.
Butter	1019	lbs. 12 oz.
Pork, sold,	1330	lbs. at 7 cts.
9 pigs, sold,	$ 27	00
5 calves, sold,	$ 20	00
1 lamb, sold,	$ 3	33
Cash received for pasturing stock,	$ 30	00

The stock now on the farm is as follows :—

1 Bull.
1 yoke of Oxen.
1 pair of Steers, one year old.
6 Cows.
1 Heifer.
1 Calf of last spring.
1 Horse.
2 Sheep.

I have now on hand, as nearly as can be estimated, one hundred ox cart loads of manure. I am in the habit of covering my mowing land with sea manure, as I can obtain it.

The labor on the farm the last year has been my own time, one hired man seven months, and an additional hand for nineteen days in the haying season. My wife superintends the Dairy, assisted by a young woman in the family. The family in addition to the above produce are supplied with what milk and summer vegetables they require.

All which is respectfully submitted.

JESSE CURTIS.

Marblehead, 31*st Dec.* 1831.

JEDEDIAH H. BARKER'S STATEMENT.

TO THE COMMITTEE ON FARMS.

Gentlemen—

My farm is situated in Andover North Parish, near Boxford, and contains one hundred and forty acres. The surface is hilly, the soil shallow, and of middling quality.

I usually cultivate with corn and potatoes about five acres—with rye and oats, from four to five acres.

I usually have about twenty acres of English mowing, and fourteen acres of meadow.

I have about forty-four acres of pasturing—the remainder of my farm is wood, and unimproved land.

My crop of grass is much larger this year than it usually has been, and is nearly twice as much as was obtained from the same land eight years since, when I first came in possession of the farm. My corn is as good as it was the last year. My oats are of good quality, but not so many bushels to the acre as the last year—that crop having been about forty bushels.

There is on the farm a large number of apple trees, and in common seasons there is made from the fruit about a hundred barrels of cider, besides twenty barrels of winter apples—this season there are very few apples.

The stock on my farm usually consists of one horse, four oxen, five cows, and eight or ten young cattle, and ten sheep.

This season I have had only four cows, and one three year old heifer till the first of August; and did not milk but four after that time.

I make about forty cords, or eighty cart loads of manure annually. This is done principally by collecting materials from meadows and ditches, and placing the same in my barn yard and hog pen.

I commonly plough up my grass land in the month of August, and cross plough it in the Spring. I plant two years in succession. The manure made in the barn yard and hog pen through the Summer, I carry into the field in the Autumn, and lay the same in heaps, to be put in the hills in the Spring. I spread from fifteen to twenty loads of my green manure to the acre, upon land intended to be laid down for grass.

The labor upon my farm is done by myself, one man, and a boy, with the addition of another man in haying. I work out with my team and earn enough, so that the labor applied to the farm, would not exceed the labor of two men through the season.

The produce of my farm the present year, as near as I can ascertain, is as follows, viz:

English hay	30	tons.
Meadow hay	14	tons.
Indian corn	143	bushels.
Potatoes	270	bushels.
White beans	2¾	bushels.
Turnips	12	bushels.
Oats	55	bushels.
Rye	9	bushels.
Cider	8	barrels.
Pork	1500	lbs.
Butter from April 1st. to Nov. 1st.	276	lbs.
Cheese—new milk	261	lbs.
" four meal'd	137	lbs.
" three "	110	lbs.

JEDEDIAH H. BARKER.

Andover, Nov. 16th, 1831.

No. II. ON IRRIGATION OF LANDS.

The Committee on Farms, to whom was referred the subject of "Irrigation of Lands," report—

That only one entry for the premium on this subject was made; and that by David Gray, of Andover. Your Committee visited his farm, and as in previous visits were gratified with the various evidences of persevering and well-directed labor and skill; and of the full enjoyment of its proper rewards, comfort and competence. They examined his experiments in irrigation, of which his account is annexed; but although creditable to the industrious proprietor, they were not considered of a sufficiently extensive and decisive character to justify the Committee in awarding the premium.

Your Committee deem this mode of improvement of the highest advantage, and are anxious that many experiments should be made to test among us the value of a process whose utility has been so fully established in more improved countries. It has been found in many cases much more than to double the produce of lands, and has been successfully applied, not only to the improvement of grass, but to the great increase of cultivated crops, such as wheat and barley. Its value upon pasture grounds and newly mowed lands, especially during our severely dry summers, must be very great. Much has already been done among us by turning water from the sides of the roads, by which means the wash of the roads contributes much to the enriching of our fields. A good deal of advantage, as your Committee have in another report remarked, might be found in being able to flood our drained meadows at pleasure. Great advantage would doubtless arise from using the water from springs, which are to be found on some of our hills; and directing it by successive small channels formed on their sides over the contiguous grounds. The county of Essex, which cannot be said to abound in springs or brooks, does not perhaps admit of many improvements of this nature; but where there is a capacity for it, there cannot be a doubt that a successful experiment would amply compensate a liberal expenditure. In some cases several springs on neigh-

boring hills, which are full in winter, might be turned into a common reservoir or basin, which may be formed by a small dam, and the water reserved for use in summer to great advantage.

The establishment of the Shakers at Canterbury, as enterprising, industrious, and excellent farmers as are to be found in the country, exhibits an example of this kind; where by turning several springs and small brooks into a small valley in which there was no standing water before, and which they formed into a receptacle by a dam by no means expensive, they have succeeded in obtaining a head of water, sufficient to last through the season, and which is used by successive dams and erections five times before it is suffered to pass off, in driving different kinds of agricultural and manufacturing machinery. It has occurred to your committee, that there may be situations in the county where upon a small scale water may be in the same way collected for the purposes of irrigation; and though the power of an individual to effect such improvements must be small, compared with the united efforts of such a numerous and industrious association, yet their successful experiment on so large a scale may serve to stimulate and encourage individual efforts in a humbler form, which may become proportionately conducive to private and public benefit. Pure water is a most efficient instrument of vegetation. In what way it operates it may not be easy to determine. It is happy for us, that without becoming adepts in chemical philosophy, the plainest farmer may employ with success in his operations, the most powerful agents in nature; and the reflecting mind will not fail to think often with grateful pleasure on the abundant diffusion of one of the most valuable aliments of vegetable and animal life.

MOSES NEWELL,
HENRY COLMAN,
JOSEPH KITTREDGE,
JOHN W. PROCTOR,
PAUL KENT,
ELIAS PUTNAM,
HECTOR COFFIN,

Committee on Farms.

January, 1832.

DAVID GRAY'S STATEMENT.

TO THE COMMITTEE ON FARMS.

Gentlemen—

The farmers of Essex having been repeatedly called upon for experiments in Irrigation, or the turning of water from its natural course, so as to overflow land that would otherwise for the most part remain dry; I will detail with as much minuteness as my recollection will permit, the result of some experiments by which I have been fully compensated for my trouble.

My first experiment some eight or ten years since, satisfied me that crops on grass land might be very much improved by irrigation; and although I did not immediately apply myself to the improvement of my lands in this way, I have almost every year made some additional improvements, and although I could never make water run up hill, I have found it would run almost any other way, and have now on my farm four several pieces containing in the whole about two acres, annually manured with no other trouble than giving a few simple directions, and nature does the work and finds materials too. In the Autumn of 1828, the course of a brook was changed so as to overflow half an acre or more of upland mowing adjoining a piece of meadow, which never was plowed, being enclosed with the meadow it was mowed every year, and produced a few hundreds of inferior fodder which hardly paid for making, in fact the land seemed of but little use, but to hold the meadow and pasture together which it lay between. In 1829 the crop was but little increased in quantity, but the field presented a more green and thriving appearance, and the grass thickened at the bottom. In 1830 the crop of grass was estimated to be that of the preceding year; and the present year 1831, there was a very visible increase on the last year's crop. The water that has enriched this land is simple brook water, not having the advantage of the wash from the road or buildings; or any other source that would tend to enrich it; and the land is so situated as to be very inconvenient to get manure to it.

I have another piece of land which was not much superior to the one above described, in quality and productiveness, it is a gravelly knoll, and has heretofore yielded one scanty crop in a year; for two years past the water has been directed so as to flash over it, generally from March till the last of May, and occasionally from showers. The present year (1831) two crops have been taken from it, either of which is double the value of what was previously raised in a season on the same ground. The improvement in the crops on this piece may in part be attributed to the advantage that this piece has over the other of taking the wash from the road and buildings. I have two other pieces, one of which has been under this mode of improvement several years; they yield an extra crop, and probably will, if attended to, as long as grass shall grow, or water flow. The expense in most cases is trifling, sometimes it may be necessary to raise the water by a dam, that it may be thrown on higher land, on which it would not run, if it were not raised above its natural channel—the water should be conveyed as far up as it will run and from the main channel at distances of ten or twelve feet, it should be let out so as to overflow the whole declivity below; a little attention to the channel and gutters is necessary, as they sometimes become obstructed and the water takes a wrong direction. I have not been able to be to particular in my statement as perhaps might be desirable, not being situated so as to have the crops weighed, but the utility of this mode of improvement will be obvious to any one who will risk the experiment.

Yours respectfully,

DAVID GRAY.

Andover, Nov. 14th, 1831.

No. III. ON RECLAIMED MEADOW.

The Committee on Farms to whom was referred the subject of "Wet Meadow Lands Reclaimed" report—

That at the request of Asa T. Newhall of Lynnfield, the only applicant the present year for the premium of the Society on reclaimed meadow, they visited his premises, and annex to

this report his own particular account of the improvement effected.

The amount of meadow recovered exceeds ten acres; the experiment is successful and the improvement and advantages obvious; the land, which was before worthless, is now productive; the work has been accomplished at a very moderate expense, which by the produce of the land has been much more than remunerated. The whole has been effected with judgment and skill; and your Committee agree in awarding to him the premium of twenty dollars. Your Committee do not say that the experiment of Mr. Newhall is susceptible of no improvement; but it was very satisfactory. They are of opinion, that it would have been, in respect not less to convenience than utility, a great advantage, if the main ditches had been perfectly straight and the side ditches precisely at right angles with the main drain; the side ditches and the drains at the foot of the rising ground where such occur, may often times be covered to advantage; and it would be an improvement in all cases, where it is practicable, to construct at the outlet of the meadow a dam with a sluice way and gate so that the water may be retained or let off at pleasure. In all cases, where such an improvement is designed or attempted, it would be useful to have a plan of the ground previously formed with all the drains intended to be made, whether open or covered, distinctly laid down. This would be a great saving of labor in the beginning; and if, afterwards, the drains should become choked or filled up, it would render it a much easier matter to open or repair them.

An experiment in reclaiming wet and bog meadows is now being carried on in England near Liverpool, at a place called Chat-Moss, under the direction of a Mr. Reed. It is represented as being eminently successful. The particular details have not yet reached us; but it is understood to have been effected first by removing as far as practicable the water by a wide main ditch and by frequent lateral ditches at right angles with the main ditch and running into it; and then carrying on to the meadow large quantities of limestone gravel and quick lime; and afterwards cultivating it with the following course of crops; potatoes,

wheat, oats, and clover. To the surprise of almost every one, abundant crops of wheat have been obtained on this bog meadow; and the expense of its redemption, managed with great economy, care, and judgment, has been fully compensated.

The subject of reclaimed meadows is of great importance to this County. Extensive tracts of this kind of land exist among us, which may, your Committee believe, at a reasonable expense be recovered from their present utter worthlessness and offensiveness, and made highly productive.

They recommend therefore that the attention of this Society should continue to be strongly directed to this object; and it is well worth inquiring by those, upon whom such a duty properly devolves, whether the laws of the State are such as to encourage these improvements; as whether, for example, when an individual is desirous of attempting such an improvement, there should not be a power of compelling an obstinate or indolent neighbor, upon whom he may in this case be dependant, to aid in opening and keeping free the main outlet for the water by which the meadow is flooded; and the effectual removal of which is indispensable to any great success in reclaiming it.

MOSES NEWELL,
HENRY COLMAN,
JOSEPH KITTREDGE,
JOHN W. PROCTOR,
PAUL KENT,
ELIAS PUTNAM,
HECTOR COFFIN,
} *Committee on Farms.*

January, 1832.

ASA T. NEWHALL'S STATEMENT.

TO THE COMMITTEE ON FARMS.

Gentlemen—

In presenting a statement of the experiment made of draining and rendering productive a piece of wet meadow land, a plan of which is herewith submitted,* containing in the

* There was a plan accompanying this statement, which it was not convenient to publish.

whole about twenty acres, permit me to observe that the land herein described, could hardly be entitled to the name of meadow, as very little grass of any kind grew thereon. The place has been known by the names of Duck-pond and Lily-pond, a considerable part of which, until within a few years, has been covered with water, bushes, dogwood, and flag, the remainder with lilies. Previous to commencing draining, in a very dry season, two or three loads of very coarse water-grass, as it is generally called, have been obtained; but laborers were always averse to this part of haying, on account of wading in mud and water, and being surrounded by snakes, with which the meadow abounded; the mud was so deep, being from one to eight feet, that in a wet season, it was with difficulty a man could pass over it, and the attempt to reclaim it was thought chimerical, by my agricultural neighbors.

About ten years since, I cut a ditch through the centre of the meadow, which in a good degree, drained the water from the surface, and caused the parts adjoining the shore to be passably dry.

In the autumn of 1825 I succeeded in ploughing lot No. 1, as marked on the plan, containing one acre, a part of which was covered with bushes; 1826, planted it with potatoes, with a smaller quantity of manure than usual for upland, which grew luxuriantly; but abundant rains in August flowed the meadow and nearly destroyed the crop.

The meadow having settled nearly to a level with the bottom of the ditch, in 1827 I sunk the ditch from one to two feet, and cut several others through the meadow in different directions as marked on the plan, spread three loads of compost manure, sowed this piece with oats and grass seed, and the same has yielded all of two tons of good hay each of the four last years. One hundred bushels of leeched ashes have been spread on it since the grass seed was put in.

In 1828 I teamed on to lot No. 2, containing one acre, two hundred loads, containing from fifteen to twenty bushels each of sand and gravel in four days with two teams and three men; spread it as well as I conveniently could on the top of the sward.

In the winter of 1829 I carried on two cords of stable manure and one hundred and fifty bushels of leeched ashes; in June following, spread the manure and harrowed in oats and grass seed. In 1830 it produced at the first crop two tons and three quarters of good English hay fit for the market; and about five hundreds of oat fodder, sown by the edge of the ditch where bushes had been dug up,—the after crop yielded about one ton.

In 1831 the crop exceeded two tons, and would undoubtedly have been greater than the preceding year, but for the grasshoppers, that previous to the mowing left the upland and collected in great numbers on this piece.

The whole expense in labor and manure on this lot, exclusive of draining and harvesting the crops, is thirty-six dollars: the oats and grass seed cost three dollars; the whole produce seven tons of hay and oats, worth in the market seventy-five dollars.

In 1828 commenced clearing the bushes from lot No. 3, containing three acres, about one third of which was covered with dogwood, lambkill, &c. on the residue of which some grass and abundance of lilies had formerly grown, but by draining had nearly disappeared; ploughed the whole as well as we were able, as the cattle could not go in the furrow.

In 1829 with about three cords of manure and two hundred and fifty bushels of leeched ashes, planted the piece with potatoes, squashes, cabbages, &c.; the crop of potatoes were not abundant, squashes and cabbages very good, pumpkins planted with the potatoes produced about thirty tons.

In 1830 covered about one acre with sand from one to two inches—spread on two acres three cords of manure and one hundred and fifty bushels leeched ashes,—sowed oats, timothy, and red-top and a small quantity of clover on one part of the piece.

In 1831, the whole piece produced eleven loads of hay of a good quality, containing not less than nine tons; that part on which the sand was put was most abundant, yielding more than three tons to the acre, as ascertained by measuring a piece of the land and weighing the hay. There was but little difference in the crops on that which was manured and that on which no manure was put when sowed.

Lot No. 4, containing two acres and fifty two poles, on a part of which there was a growth of pine and maple, is cleared of all bushes, stumps and roots, and is in a state of forwardness for sowing.

Lot No. 5, containing an acre and eighty five poles, and Lot No. 6, containing one acre and sixty one poles, are cleared of bushes, and prepared for carting on sand.

No. 7 is in a state of nature, except the draining. No. 8 is a piece of hard bottom, over which the brook flows that runs through the meadow.

Very respectfully, your ob't servant,

ASA T. NEWHALL.

Lynnfield, Oct. 1831.

N. B. The whole number of rods of ditch is four hundred and thirty-seven, all of which was cut four feet wide and from two to three feet deep, excepting forty-seven rods, which is about two feet wide and from one to two feet deep. The whole expense of cutting the ditches was about one hundred dollars and the clearing and deepening cost about half that sum.

A. T. N.

NO. IV. ON AGRICULTURAL IMPLEMENTS.

The Committee on Farms to whom was referred the subject of Agricultural Implements, report—

That there were presented for examination by Jacob Wiley of Lynn, a pair of boots or shoes for horses made of wood and leather; and designed to buckle upon the foot that the animal might walk without sinking upon the salt marsh, so as to enable the farmer by putting a temporary and very broad rim upon the wheels of a common cart, to bring off the hay, which he would otherwise be obliged to carry on poles by hand, or leave in stack upon the meadows until the season permitted him to go for it on the ice. The object in some parts of the country is of great importance; and the Committee having had satisfactory testimony that these shoes answered a valuable purpose, agreed to

award to Mr. Wiley a gratuity of three dollars. How far he is to be considered as the original inventor and in what respects they admit of being improved, your Committee are unable to determine. Shoes of a somewhat different construction, but seen by some of your Committee to serve the purpose well, were the last season used on the Lynn Marshes, with great advantage to the farmers engaged in securing hay; but as this is the first year within the knowledge of your Committee, when any such contrivance has been used, and Mr. Wiley's shoes or boots having been found useful, the Committee deemed them deserving of their notice.

Salt Hay when well cured is a very valuable feed for neat cattle and horses, and may be fairly considered as equivalent in value to more than one half of the same amount of English hay; and the salt meadows requiring no manuring and demanding no other improvement than that of cutting and keeping clear numerous drains, and filling up the pond holes with what is obtained from the ditches, will be always highly appreciated by the farmers in their neighborhood. Salt hay taken directly from the marshes and spread upon grass ground is by many intelligent farmers pronounced equal to the best stable manure applied to the same purpose, and for this object alone, in the neighborhood of the Lynn Marshes, several practical men consider it as worth five dollars per ton. A mixture of this feed with English hay is conducive to the health of the animals fed upon it; and is proved to be as agreeable as it is nutritious by the avidity with which they seize upon it. The importance of thoroughly draining such meadows deserves to be much insisted upon as by actual experiment the crop by such means will be more than doubled; and a better kind of grass than is otherwise found is likely to be brought in.

It has occurred to some of your Committee that a cheap and moveable rail way, with a carriage adapted to it, to be drawn by men, might often on these marshes be used to great advantage; and since this suggestion, intelligence has been received, that such an invention has actually been brought into use in England, for the purpose of conveying marl or manure on deep bog mead-

ows; "the rail way used is said to be so exceedingly portable that a sufficient quantity of rail way to furnish a means of conveying the marl or manure on to one acre, can be removed to the next acre at a cost of two shillings, and without losing a moment's time."* The form of this machinery is not described, but the knowledge of the fact itself may excite the invention of some ingenious men, to prepare something for our purpose equally convenient and useful.

Our agricultural tools still admit of great improvement. Much has already been gained. The plough, that first of all agricultural implements, has received within a few years various changes, which have been highly beneficial in facilitating its operation; diminishing the power necessary to its draft; and enabling the ploughman to make much better and neater work. Other implements of husbandry admit of like amelioration and deserve the attention of ingenious and practical men. Your Committee state, on the authority of one of their number, that the revolving horse rake lately introduced into this part of the country from Pennsylvania proves a most valuable invention; that a trial of one season has much exceeded his expectations of its utility; and that on smooth land, a man with one horse, will rake as much hay and do it in as clean a manner as six men can do in an equal time with the common hand rakes. This rake is a patented instrument, and its cost is considerably enhanced by this circumstance; but the saving of labor on a large farm will soon defray its expense.

Your Committee have likewise the pleasure on the authority of one of the most intelligent and largest farmers in the State of New York, in no way concerned in the invention of the instrument, of announcing the construction of a mowing machine, which, by his own trial, is capable on smooth ground with one horse and man, of mowing neatly and closely ten acres per day, and this where the grass was very much lodged. A hay-spreading machine is likewise in the progress of construction, whose utility if successful, must be great. Agriculture hitherto, com-

* British Farmer's Magazine for Nov. 1831. p 471.

pared with manufactures and the mechanic arts, has derived little advantage from labor-saving machines. The farmer is literally compelled to get his bread by the sweat of his brow; and whatever invention may contribute to abridge his toil and enable him at less expense to extend his productions must be welcome to himself; by multiplying the means of human subsistence and comfort will prove beneficial to the community; and encourage the laborious farmer with the hope of keeping in sight in his own art, the best of all arts, though at a humble distance, of the other rapidly advancing inventions of civilized life.

MOSES NEWELL,
HENRY COLMAN,
JOSEPH KITTREDGE,
JOHN W. PROCTOR,
PAUL KENT,
ELIAS PUTNAM,
HECTOR COFFIN,

Committee on Farms.

January, 1832.

No. V. ON MILCH COWS AND HEIFERS.

The Committee on Milch Cows and Heifers beg leave to report—

That they regard the improvement of the Dairy Stock of the County as an object of the highest importance, since the produce of the Dairy must be always a considerable article with the farmers of Essex, who are in the neighborhood of markets where butter and cheese command a ready sale.

The Committee believe that great improvement in our milking stock may be effected. The laws of nature are uniform, and as there is a tendency in every species of animals to transmit their peculiar and constitutional qualities to their offspring, there cannot be a doubt that the extraordinary property which some animals possess of making large secretions of rich milk may by skill and care become the characteristic property and distinction of a whole race. The obvious improvements, which have been

made in the breeds of horses, sheep, swine, and beef animals, give the best reason to hope for as great improvement, in the character of our dairy stock. Such improvements clearly demand extraordinary skill, judgment, experience and perseverance, and cannot be accomplished but after a length of time.

Your Committee regret that few systematic attempts for effecting this object on an extended scale have come within their knowledge. No better mode for promoting it on the part of the Society suggests itself to your Committee than to encourage by liberal premiums every deserving effort towards this object; such is the exhibition of cows distinguished for their product, the introduction and retaining of them in the County, the rearing of the calves, the liberal feeding of these animals, which is indispensable to their growth and vigor; and the requiring, in respect to bulls presented for the premiums of this Society, not only good size, form, and appearance, but evidence that they are descended from a good milking stock; since it is plain that these improvements, if carried to any extent, will depend as much on the character of the bull as the cow.

Your Committee in reference to this stock consider two inquiries as mainly important; first as to the quantity, second as to the quality of their produce. The length of time between her calvings, during which a cow may be kept in milk, depends more upon the manner in which she is fed and milked, especially with her first calf, than upon any constitutional predisposition or capacity. The quality of the milk of a cow is supposed by many persons to bear an inverse proportion to the quantity given by her, but this is not invariable. In respect to the same animal it is certain, that at a season when she gives the largest quantity of milk, its quality for producing cream will be inferior to what it is when the quantity is diminished; but it is by no means as certain, that the larger the quantity of milk given by any cow, the poorer its quality; on the contrary, instances are known in which cows have given milk both in the greatest abundance and of the richest kind. The quality of the milk depends, in some measure on the nature of the food, the length of time the

cow has been in milk, and the season of the year; but it is in a great degree matter of constitution, some cows giving milk of which butter cannot be made, and others giving milk the cream of which needs scarcely a revolution of the churn to produce the finest butter. Experiments made with reference to this point by one of your Committee, have shown a difference in cows of equally promising appearance, and giving like quantities of milk, and fed in the same pasture, as great as 13 to 2. The improvement to be sought for therefore is both in quantity and quality. The Holderness stock has been always celebrated for extraordinary quantities of milk; the Alderney for the superior richness of their milk. It is reasonable to believe, that a valuable improvement might be effected by crossing the finest animals of two such kinds with each other.

Your Committee with a view to furnish some standard for their own estimation of the value of animals which might be presented to them, and to excite a spirit of just emulation, where emulation cannot fail to do good, and to show at the same time what improvements may yet be hoped for, have been at the pains to collect some facts, which they beg leave to state.

They have obtained from some of the principal milk farmers in the neighborhood of Salem their estimation of the average amount yielded by each cow in their establishments during the time they are in milk. Ichabod Nichols, whose farm is on the Turnpike, where forty cows are kept, estimates it at five quarts per day. E. Patterson on the Howes farm in Beverly, where fifty cows are kept, at five quarts per day. Erastus Ware, with an establishment of fifty cows on the Pickman farm, at four quarts per day. These statements agree with those made by some of the milk men in the vicinity of Boston. Mr. Nichols feeds regularly in winter with vegetables, (preferring potatoes in a raw state to other vegetables,) and Indian meal with the best of English Hay. Mr. Patterson it is believed does the same. Mr. Ware besides hay, with some vegetables and brewer's grain; but is of an opinion that the increased quantity of the milk will not compensate for the increased expense of the feed, and therefore that he should be a loser by high feeding. Mr. Nichols is

of an opinion that he can at any time increase the milk of his cows in the proportion of eight to five by increasing their allowance of potatoes and meal.—These quantities, however, upon the whole, appear to your Committee small. A cow owned by John Barr in Salem, which took a premium in Brighton in 1822, gave in 274 days 2965½ quarts, and in 268 days in 1823,—2923 quarts which is at the rate of more than 10¾ quarts per day. A cow owned by a Mr. Sanderson at Waltham is stated to have given in the last year 1140 gallons which is at the rate of 12 46-365 quarts per day. Curwen in England, in his milk establishment of twenty three cows, speaks of two winter cows averaging 14½ quarts of milk per day from January to May, and that three summer ones averaged sixteen quarts each per day from May to November, six months. This was wine measure. Harley, at his famous Dairy in Glasgow, where a hundred cows were kept, an establishment which was the admiration of the whole country, says that he had one cow, which for a considerable time gave forty quarts per day and was milked three times per day, and he had a number of other fine cows, which when newly calved and highly fed, produced from twenty five to thirty quarts per day, (wine measure probably.)

The Rev. Henry Berry has furnished an account of the produce of the cows of I. Whitaker near Greenholme, Eng.—They have given and give twice a day as follows:

	gall's	*qts.*
Yellow Rose, at three years old,	4	2
Same " at four years old,	4	3
Red Daisy,	4	0
Magdalene, upwards of	4	0
Wildair,	4	0
Western Lady,	3	2
Venus, 16 years old,	3	1
Alfrede,	3	0
Adela, first calf,	3	0
Yam,	3	0
Moss Rose, at all times, a moving mountain of flesh,	2	0

All wine measure.

All these your Committee consider as well-attested facts and of a very extraordinary character. The last gentleman has made the breeding of animals his business for years, and has particularly aimed at procuring a superior dairy stock, in which it must be admitted he has succeeded in a most extraordinary degree. Other animals of a very superior milking character in our own country might be referred to, but it is not deemed necessary.

The quality of milk, as your Committee have observed, varies to a great extent. A gallon of milk is the proportion for a pound of cheese, but the quality of the cheese must vary with the quality of the milk. The quantity of milk required for a pound of butter fluctuates between wide limits. Mr. Kent of Kent Island has obtained a pound of butter in the autumn when his cows have been long in milk from five or six quarts. Mr. Moses Newell of West Newbury has been as fortunate. These were beer quarts. This is a small proportion of milk and it would be desirable to know the particular circumstances of the cows, their feed, and the management of the milk. Curwen has found it to vary (and something depended on the kind of food given) from eight to nine, eleven, and fifteen quarts (wine measure) to a pound of butter. These facts show a very great difference in the quality of the milk of different cows and at different seasons.

The famous Cramp Cow in England made six hundred and seventy-five pounds of butter in a year. The Oakes Cow owned in Danvers in one week made nineteen and a quarter pounds, and for three months together upwards of sixteen pounds per week. The Nourse Cow owned in Salem is said to have made twenty pounds in one week and upwards of fourteen pounds per week for four months. A cow imported by John Hare Powell in Pennsylvania, who is entitled to the highest credit for his enterprise and liberal expenditures in order to introduce the valuable stock of Improved Durham Short Horns into the country, made at the rate of upwards of twenty pounds per week. A native heifer, two years old, presented by Ladd Haseltine of Haverhill last year for exhibition at the Cattle Show of this Society and with her first calf, made at the rate of fifteen pounds of butter per week ; and a cow owned by Samuel Henshaw of Springfield,

Mass. from a native cow and sired by a bull of the Improved Durham Short-Horn Stock, made at the rate of seventeen and three-quarters pounds of butter per week the last summer upon grass feed only. Jesse Putnam of Danvers by very liberal feeding has obtained from four cows of our native stock upwards of two hundred pounds of butter each in a season; and Jesse Curtis of Marblehead from cows of our native stock and with no extra feed whatever has obtained at the rate of one hundred and eighty-one pounds each per season.

Your Committee refer to these well-attested facts with great interest and pleasure, as showing what may be hoped for by judicious, intelligent, persevering and systematic attempts to improve the dairy stock of our country; in the hope of exciting a much greater attention to the subject among our farmers; and in the firm belief that any distinguished improvements among ourselves in this most important branch of husbandry, besides the honest satisfaction with which such success must be attended, will amply remunerate the expense and essentially advance the interest of the fortunate agent in effecting it.

Your Committee will now proceed to award the premiums offered on this occasion, and in this duty, which is always more or less difficult, if they are unfortunate enough to err, they can only say they have been faithful to their own best judgment.

There were nine milch cows exhibited for premium. The Committee are unanimous in awarding the first premium of fifteen dollars to Samuel Noah of Danvers for his cow of native stock.

This cow is nine years old and was raised in Wenham in this county. She calved the 28th of April last; and in the one hundred and forty-eight days succeeding the 2d of May she yielded six thousand and fifty-four and a half pounds of milk measuring five hundred and eighty-seven and one-eighth gallons, which is more than four gallons per day. The most she has given in one week has been three hundred and forty-three pounds. One quart of milk (beer measure) weighs two pounds nine and a quarter ounces. She has had no extraordinary feed. She has been kept in a good pasture, and has had some green corn-stalks

at night since they were fit to be cut. As her owner sold the milk, her butter qualities have not been tried, which the Committee regret, as in the just estimation of the value of a cow, it is material to consider the quality as well as quantity of her milk.

Your Committee award the second premium of ten dollars to Isaac Osgood of Andover for his cow. She is nine years old; and without any extra feed has given seventeen quarts of milk in a day and produced fifty pounds of butter in the month of June. Mr. Osgood is entitled to much credit for his attention to the improvement of his neat stock.

Your Committee award the third premium of five dollars to John Torrey of Newbury for his cow, nine years old. Her appearance was rather ordinary; but her produce good, having given upon very moderate keeping nearly eight quarts per day, and enabling her owner, who represents himself as a poor man, to realize by the sale of her milk a handsome profit.

As an example of good management we deem it proper to subjoin the owner's account in his own form—

"The statement I now make is from the 5th February, 1831, to the present time, and the average mess per day has been eight quarts lacking not quite a gill. Her calf was killed about the first of February.

Keeping.

Half a ton of salt hay - - - - - - - -	$ 2 00	
45 bushels of small grain, at 4½d. - -	2 87	
Stalks and suckers from 195 rods of land, excepting about half a load of dry stalks not given her yet - - - -	3 00	
One bushel of potatoes - - - - - - -	20	
		——8 01
Pasturing from 25th Aug. to the present time		1 00
		$ 9 01

Not being able to obtain a pasture she was kept up until the 25th August, a great part of the time to her disadvantage.

Milk sold since Feb. 5—six quarts one pint per day for 236 days, 383½ gallons, at 16 cents per gallon	$ 61 36
Keeping	9 01
	$ 52 35

Newbury, Sept. 28, 1831."

Josiah G. Tyler of Bradford offered the same valuable cow which last year received the second premium of the Society as a milch cow. Having received the second premium on that occasion she was disqualified for any but the first premium or this, for which another was preferred. This cow since the first of April has produced as per the owner's account, one hundred and fifty four and three-quarter pounds of butter; and in the second week in June, seven days, she yielded one hundred and twenty six quarts of milk, beer measure, equal to an average of eighteen quarts per day for that time.

There were no heifers in milk, which came within the conditions on which the premiums of the society were offered. There were several promising heifers presented, which were not in milk.

A heifer, three years old, which brought her first calf the first of July, belonging to Ralph H. Chandler, and now giving from eight to nine quarts per day, though of a small sized breed, is in the opinion of the Committee deserving of the notice of the Society; and they recommend a gratuity of four dollars to the owner.

For a very likely heifer belonging to Ebenezer Jenkins of Andover, in milk about five weeks, your Committee recommend a gratuity of three dollars.

For a promising heifer belonging to Samuel Hood of Topsfield, sixteen months old, your Committee recommend a gratuity of two dollars.

Your Committee have to regret that in respect to several animals in the pens no person was present to give an account;

and in regard to some, that the account given was neither so full nor particular as is in such cases to be desired.

HENRY COLMAN,
JEREMIAH COLMAN,
DANIEL PUTNAM,
WM. P. ENDICOTT,
} *Committee on Milch Cows and Heifers.*

Andover, Sept. 29th, 1831.

No. VI. ON THE DAIRY.

The Committee on claims for the premiums offered for *Butter* and *Cheese*, have attended to this duty, and report—

That there were seven parcels of butter exhibited by the following persons, viz.

Ralph H. Chandler of Andover.
William P. Endicott of Danvers.
Jacob Osgood of Andover.
Margaret Wardwell of Andover.
Stephen Abbott of Andover.
Betsey Parker of Bradford.
Edward Tappan, Jr. of Newburyport.

The parcels exhibited by the three first mentioned persons came within the rules prescribed by the Trustees—the others did not exhibit a sufficient quantity.

Your Committee have awarded to

William P. Endicott,	1st premium,	12	dollars.
Jacob Osgood,	2d "	10	dollars.
Ralph H. Chandler,	3d "	8	dollars.

Your Committee recommend the following gratuities to be given, to

Margaret Wardwell, five dollars—she having made more butter in the same time than either of the others.

Betsey Parker's small sample of butter was considered by the Committee superior to any other offered,

Mr. Abbot's butter was of good quality.

Mr. Tappan's was good, but new and fresh.

No cheese was exhibited, coming within the rules prescribed.

Respectfully submitted.

H. Clark, *per order.*

JACOB OSGOOD'S STATEMENT.

TO THE COMMITTEE ON THE DAIRY.

Gentlemen,

I submit to your examination a brief account of the butter and cheese we made the present year, from April 1st to September 28th.

Butter made in	April	54 lbs.
"	in May	70
"	in June	158
"	in September	75
		357 lbs.

The weight of new milk cheese made in July and August, 610 lbs.

The weight of four meal cheese made during the time of making butter, 240 lbs.

The process of making and preserving the butter and cheese is the same as that in my former statement.

The above quantity of butter and cheese was made from the milk of ten cows, but on account of their coming in at different times have not received the benefit of more than nine. The greatest part of the time we calculate on having used the milk of two cows for family use. There has been no alteration in their winter or summer keeping. The cows are the same with the addition of one year.

Respectfully yours,

JACOB OSGOOD.

Andover, Sept. 28th, 1831

R. H. CHANDLER'S STATEMENT.

TO THE COMMITTEE ON THE DAIRY.

Gentlemen—

The following is an account of the produce of butter made from five cows, from the 1st of June to the 9th of July inclusive. There is one hundred and seventy-six pounds in four firkins which I offer to your notice.

Mode of making butter.—The milk is kept up stairs when the weather will admit. We do not allow the milk to stand any longer before the cream is separated than the milk is sweet. We churn twice a week. The butter is worked more times or less until the butter-milk is all separated; then it is put in the firkins as solid as it can be; when the firkin is full we take pains to keep the air from it as much as possible. The present season we put on a cloth dipped in melted butter, and then made the cover as tight as we could.

The ages of the cows are 2, 12, 1, 6, 2, 5 years, all native breed. Their winter keeping is meadow hay the fore part, and English the latter part. We gave them the last spring, from 1st of April till towards the last of May, one pint of cob meal each a day. As our pasturing is rather scant for the number of cows we keep, our practice has commonly been to give them some hay through the season; but as the feed was better the present season than usual, we gave them but a little hay. We have taken much pains to get firkins that will keep butter best. Ash is as good as any we find. The Stock belongs to Rev. Abiel Abbott and myself.

All which is respectfully submitted.

RALPH H. CHANDLER.

Andover, (N. P.) Sept. 29th, 1831.

MARGARET WARDWELL'S STATEMENT.

TO THE COMMITTEE ON THE DAIRY.

Gentlemen,

I offer for your examination a specimen of butter. One jar was filled in June—the other in September.

We have nine cows,—all of native breed, and from five to fifteen years old.

From the 1st of June to the 9th of July, I made three hundred pounds of butter.

I have made this season eight hundred and forty eight pounds of butter, and five hundred and fifty pounds of cheese. I put down two hundred pounds in June and July, which I should have exhibited, had it not been that the scarcity of butter the month past, induced me to part with it.

We have had fourteen persons in the family through the season, who have used milk freely; and we have sold milk to four other families. Our cows have had no feed, but common pasturing. I annex a specification of the *times* and *quantities* in which the butter was made, which is attested to, by those who assisted in making it. MARGARET WARDWELL.

Andover (S. P.) Sept. 1831.

SPECIFICATION.

1831.

April	16	6 lbs.	May	31	14½ lbs.	July	18	10¾ lbs.
	21	8½ "	June	1	15 "		21	14½ "
	25	7½ "		4	12¼ "		26	8 "
	27	6½ "		6	14¼ "		30	16 "
May	2	9¼ "		8	15½ "	Aug.	3	15 "
	4	11¼ "		10	16¼ "		8	9 "
	6	11½ "		13	16½ "		12	12 "
	7	13½ "		15	17¼ "		20	10½ "
	10	12 "		17	16 "		25	6 "
	11	12½ "		20	16½ "		30	10½ "
	13	12 "		22	27 "	Sept.	3	14¾ "
	14	12½ "		25	15 "		6	14 "
	16	14 "		27	15 "		9	14¼ "
	18	14¼ "		29	16 "		12	14 "
	20	14½ "	July	1	15 "		14	16½ "
	23	13 "		4	14 "		16	13½ "
	24	11½ "		5	16 "		19	17½ "
	26	14½ "		6	15 "		23	14 "
	28	17¼ "		8	15 "		26	14 "
	30	13¾ "		9	14 "		27	14½ "
							28	7 "

No. VII. ON DOMESTIC MANUFACTURES.

The Committee on Domestic Manufactures have attended to the duties assigned them, and offer the following report :—

The Committee were gratified with the exhibition of the articles of domestic manufacture, although they regret that in number and variety it did not equal that of the last year.

The Committee recommend to the Society to award the following premiums and gratuities.

To Rebecca Moody of Newbury, for 25 yards of carpeting, 1st premium, - - - - - 5 dollars.

To Mrs. Stephen Abbott of Andover, for 25 yards of carpeting, 2d premium, - - - 3 dollars.

To Mrs. Daniel Johnson, Haverhill, for 20 yards carpeting, 3d premium, - - - - - 3 dollars.

To Mrs. Maria Titcomb, Byfield, for carpeting, a gratuity of - - - - - - - 1 dollar.

To Mrs. Samuel Pecker, of Haverhill, for carpeting, a gratuity of - - - - - - - 1 dollar,

To Miss Hannah Foster, of Andover, for a straw bonnet, 1st premium, - - - - - 3 dollars.

To R. K. Symonds, of Boxford, for a straw bonnet, 2d premium, - - - - - 2 dollars.

To Miss Susanna Mills, of Salem, for a palm leaf hat, a gratuity of - - - - - 2 dollars.

To Mrs. Walker, of Andover, for a hearth rug, 1st premium, - - - - - - 3 dollars.

To Mrs. Fox, of Newburyport, for a hearth rug, a premium of - - - - - - 2 dollars.

To Catharine B. Lunt, of Salem, for 2 hearth rugs, a gratuity of - - - - - 1 dollar.

To Joanna Adams, of Newbury, for 2 hearth rugs, a gratuity of - - - - - - 1 dollar.

To Howard & Co. of Andover, for 46 yards superior flannel, a gratuity of - - - - - 4 dollars.

Several pieces of very handsome flannel were exhibited by Mr. Stevens, of Andover, not offered for premium.

To Mrs. Stephen Abbott, of Andover, for 4 pairs woollen hose, a premium, - - - - - 1 dollar.

To Mrs. Judith Pettengill, of Methuen, for a very handsome pair of stockings, knit by her when 100 years of age, a gratuity, - - - - - 2 dollars.

To Lucy Osgood, of Andover, for a piece of linen cloth, a gratuity of - - - - - 2 dollars.

To Martha L. Gray, of Andover, for a counterpane, a premium, - - - - - - - 4 dollars.

To Mrs. Daniel Johnson, of Haverhill for a coverlid, a gratuity of - - - - - - 1 dollar.

To Edna Lunt, of Newbury, for a handsome lace veil, a premium, - - - - - - 3 dollars.

To A. M. Long, of Newburyport, for a lace veil, a premium, - - - - - - 2 dollars.

To Susannah Hutchinson, of Danvers, for a lace veil, a premium, - - - - - - 1 dollar.

To Miss C. D. Lunt, of Salem, for a lace veil, a gratuity of - - - - - - 1 dollar.

To Susan M. Low, of Andover, for a cap and veil, a gratuity of - - - - - - 2 dollars.

To Adeline and Cecilia Poor, of Methuen, for 2 veils, a gratuity of - - - - - - 1 dollar.

To Eunice Hutchinson, of Danvers, for a lace cap, a gratuity of - - - - - - - 2 dollars.

To Mehitable P. Wardwell of Andover, for a veil, a gratuity of - - - - - - 1 dollar.

To Mary M. Kimball, of Andover, aged 12 years, for several specimens of skill and industry, a premium, - - - - - - - 3 dollars.

To Elizabeth Valpey of Andover, 5 years old, for specimens of skill and industry, 2d premium, 2 dollars.

To Margaret Wardwell, of Andover, 10 years of age, for specimens of skill and industry, a gratuity of - - - - - - - 1 dollar.

To Harriet L. Stevens, of Andover, for do. 1 dollar.
To Mary S. Bennet, of Danvers, for handsome specimens of needle work, a gratuity of - - 1 dollar.
To Mary Valpey, of Salem, for a handsome cape made of feathers, a gratuity of - - - 1 dollar.
To M. J. and E. M. Kidder, for crickets wrought on rug canvass, a gratuity of - - 1 dollar.
To Mrs. Dorcas Abbott, of Andover, for a coverlid, a gratuity of - - - - - 1 dollar.
To Mary Ann Durant, of Andover, aged 12 years, for a veil, cap and map, - - - 2 dollars.
To William Johnson jun. of Andover, for specimens of raw silk thread and cocoons, - - - 2 dollars.
To Enoch Boynton, of Newbury, for specimens of raw silk, cocoons, thread and mits, - 3 dollars.

There were several other articles of utility as well as some of mere ornament which added to the interest of the occasion. And the Committee hope, as the design of the Society becomes better understood and its usefulness appreciated, that the artists and manufacturers of the county, as well as the farmers, with their wives and daughters, will feel a greater interest in bringing forward, at future exhibitions, specimens of their ingenuity and industry.

By order. GARDNER B. PERRY.

No. VIII. ON CIDER.

The Committee on Cider report—that they had hoped the liberal premiums offered by the Society for cider would have led to much greater competition, and that this article would have been exhibited to the Committee of a superior quality; but in this expectation they have been disappointed. All the cider offered for premium was of an ordinary quality, nor was there any thing peculiar in the manner of making or preserving to recommend it. As the Society have offered premiums for cider of a superior quality only, the Committee do not feel themselves

authorized to award any thing in the character of premiums; but as several years have elapsed without any premium having been awarded to the competitors, the Committee would recommend gratuities in the present case, in the expectation, that our farmers may be encouraged to pay more attention to this subject, and be led to exhibit to the Society better samples of their cider. The Committee recommend the following gratuities,—

To John Cole of Boxford - - - - 5 dollars.
" Messrs. Kidder and Swift of Andover 3 dollars.
" John Foster of Andover - - - - 1 dollar.
" Daniel Foster of Andover - - - 1 dollar.

It is a matter of some surprise that in a part of the country, where fruit of an excellent quality is so abundant as in the County of Essex, there should not be more attention paid to the manufacture of cider. As a common beverage it is one of the most pleasant and healthful which our country affords, and might easily be made a source of great profit. It is stated on good authority that in the town of Orange, in the State of New Jersey, which contains a population of about four thousand inhabitants, there are manufactured and sold, on an average, twenty thousand barrels of cider, annually, at the rate of about five dollars per barrel, giving about one hundred thousand dollars receipts for this single article. If, to the farmer, this produce of his orchard can afford both pleasure and profit, to the philanthropist it must be a subject of no less importance, as substituting a pleasant and healthful beverage in the place of that bane of morals and prosperity, the use of ardent spirits.

Ebenezer Moseley, *per order.*

Sept. 29, 1831.

No. IX. ON THE CULTIVATION OF POTATOES.

The Committee appointed to award premiums on the best conducted experiments in raising potatoes, have attended to that service, and report—

That six specimens were presented for their examination, three of which only came within the rule prescribed to the Committee for awarding premiums.

Having duly considered the several claims, they have awarded as follows, viz.

To Capt. Richard Jaques of Newbury, the Society's highest premium of seven dollars, for the best conducted experiment, in raising potatoes on land exceeding one half acre.

To Mr. Samuel Gray of Andover, the highest premium of seven dollars for the best conducted experiment, in raising potatoes from the seed of the apple, they being of the second year's growth, and in quantity as required by the rules of the Society.

To Mr. Silas Follansbee of West Newbury, the second premium of five dollars for the second best experiment in raising potatoes from the seed of the apple, they being of the second year's growth, and in quantity as required by the rules of the Society.

Your Committee recommend a gratuity of three dollars to Mr. James Locke of Andover, for his experiment in raising potatoes from the seed of the apple, being four and a half bushels from the seed of two balls. The potatoes raised by Mr. Locke were of a very superior quality.

They also recommend a gratuity of one dollar each, to Asa T. Newhall of Lynnfield, and Moses French of Salisbury, for their specimens of potatoes raised from the seed of the balls.

DAVID GRAY, *per order.*

Andover, Sept. 29, 1831.

There were two specimens of sweet potatoes exhibited, one by Daniel Putnam of Danvers, which were of a superior quality; the other by Jonathan Bradley of Andover.

RICHARD JAQUES' STATEMENT.

TO THE COMMITTEE ON EXPERIMENTS IN THE RAISING OF POTATOES.

Gentlemen—

I submit to your consideration the following account of a lot of land planted with potatoes in the season of 1831, the

parcel of ground contained eighty-six rods. The land was sowed with wheat in 1830, without manure, and yielded at the rate of twenty-four bushels to an acre. The land was ploughed soon after the wheat was taken off. In 1831, May 16, the land was ploughed seven inches deep, and harrowed, and planted the 17th and 18th, in rows or drills, fifteen rods long, with two kinds of potatoes.

About five cords of coarse manure were used.

	I. *White Potatoes.*	*bushels.*
No. 1.	Small potatoes, one foot apart, under manure,	$7\frac{1}{4}$
2.	Middling size, " "	$6\frac{5}{8}$
3.	Large, cut, "	$6\frac{3}{4}$
4.	Small, on manure,	$7\frac{1}{4}$
5.	Middling, do.	$8\frac{3}{8}$
6.	Large, cut,	$8\frac{1}{2}$
		—$44\frac{3}{4}$
	II. *Chenangoes.*	
7.	Small potatoes, under manure,	$7\frac{1}{4}$
8.	Middling size, "	$7\frac{3}{4}$
9.	Large, cut, "	$7\frac{1}{2}$
10.	Small, on the manure,	$7\frac{3}{8}$
11.	Middling, "	$7\frac{1}{2}$
12.	Large, cut,	$8\frac{3}{4}$
		—$45\frac{3}{4}$
	III. *Chenango Double Drills, on Manure.*	
13.	Small potatoes, rows 9 inches apart, potatoes 18 inches,	$10\frac{3}{8}$
14.	Middling size potatoes, " "	11
15.	Large " cut, " "	$8\frac{7}{8}$
		—$31\frac{1}{4}$
	IV. *White Potatoes, Double Drills, on Manure.*	
16.	Small potatoes, rows 9 inches apart, potatoes 18 inches,	10
17.	Middling size, " "	$9\frac{5}{8}$
18.	Large potatoes, cut, "	11

V. *White Potatoes, in Hills, on Manure.*

19. Small potatoes, 3 in a hill, $9\frac{3}{8}$
20. Middling size, 2 in a hill, $8\frac{3}{8}$
21. Large potatoes, cut, 3 pieces in a hill, $10\frac{1}{2}$

—$28\frac{1}{4}$

VI. *Chenagoes, in Hills, on Manure.*

22. Small potatoes, 3 in a hill, $8\frac{7}{8}$
23. Middling size, 2 in a hill, $9\frac{3}{4}$
24. Large potatoes, cut, $8\frac{1}{2}$

—$27\frac{1}{8}$

VII. *Chenangoes, Manure ploughed in.*

25. Small potatoes, one foot apart in the row, $8\frac{1}{8}$
26. Middling size, do. $9\frac{1}{8}$
27. Large cut, do. 8

—$25\frac{1}{4}$

VIII. *White Potatoes, Manure ploughed in.*

28. Small potatoes, one foot apart in the row, $7\frac{1}{2}$
29. Middling size, do. $7\frac{7}{8}$
30. Large cut, do. 8

—$23\frac{3}{8}$

Whole number, $255\frac{3}{8}$ bushels.

The single drills were two feet nine inches apart, the double drills four feet, the hills three feet 6 inches apart.

The potatoes from the small white seed were not so large, but more numerous. Those from the hills and where the manure was ploughed in were of the best size.

Newbury, Sept. 29th, 1831.

RICHARD JAQUES.

SAMUEL GRAY'S STATEMENT.

TO THE COMMITTEE ON EXPERIMENTS IN THE RAISING OF POTATOES.

Gentlemen,—

I exhibit for your inspection six sorts of Potatoes, the second year from the seeds or balls. The balls were gathered in the Autumn of 1829, the seeds were separated,

dried, and the succeeding Spring sowed in the garden in a bed in drills three feet square, and cultivated like garden vegetables. They continued to grow till checked by the frost, when they were gathered. The three feet square of ground produced three and a half quarts, varying from the size of a pea, to that of a pigeon's egg. In the Spring of 1831, being overlooked, they were not planted till the 30th of May ; the several kinds were planted by themselves and cultivated in the usual way ; the three and half quarts of seed were planted in forty hills and produced four bushels, an average of a bushel to ten hills, more than three-fourths of which were were of a size suitable for cooking. As to their quality and time of ripening, I am at present unable to decide, although several of the kinds cook very well. I think they will require another planting to ascertain their full size, quality, productiveness and time of ripening, as the tops were green and flourishing when they were gathered, which was Sept. 21st. Nos. 1, 2, and 3 yield well, are of a good size and quality. I think No. 1 will prove to be an early potato when come to maturity. No. 5 has a yellow appearance when cooked. Nos. 4 and 6 are not so promising in shape. Some of the smallest were selected and planted by themselves. The result was, they produced small potatoes. I noticed when gathering the present crop, that some of the potatoes had sprouted and showed signs of vegetating, while the tops continued green and growing. I can account for this only that the time of sprouting indicated the season that the potato will ripen when come to maturity, but not having attained their full size the tops continued to grow, while the potato, uneasy in its too long confinement, was about giving notice of the time of its emancipation by sending up another crop of shoots. I am unable to say from what kind or kinds of potatoes the balls were taken, but with one or two exceptions they are unlike any raised on the farm from which the balls were selected. I think the next crop will be of a larger size and better quality.

Yours, respectfully,

SAMUEL GRAY.

Andover, Sept. 27, 1831.

JAMES LOCKE'S STATEMENT.

TO THE COMMITTEE OF THE AGRICULTURAL SOCIETY ON POTATOES.

Gentlemen—

I hereby present a statement of an experiment on raising potatoes from the balls.

In the season of 1830 I raised 6 lbs. potatoes from the balls. May 6th, 1831, planted the said 6 lbs. potatoes on a piece of land 21 feet by 19—8 rows in drill, which produced as follows:

First	2 rows	80 lbs.	potatoes
Second	2 "	64 "	"
Third	2 "	68 "	"
Fourth	2 "	80 "	"
Total		292 lbs.	

a specimen of which is herewith exhibited.

JAMES LOCKE.

Andover, Sept. 29, 1831.

No. X. ON WORKING OXEN AND STEERS.

The Committee appointed to examine the Working Oxen and Steers entered for premium, have attended to that duty, and report—

That the Exhibition of working cattle has been highly satisfactory and pleasing. The number of animals of this description far exceeded those of any former year, and their quality was of the first order. Among the number exhibited, there were only *ten pair* that were tried in the drawing of loads. The short time in the power of the Committee to devote to these experiments, necessarily renders this mode of trial very imperfect. The Committee also noticed particularly the manner in which the cattle performed their task in the ploughing field; and in making up their judgment as to the comparative merits of the

cattle, they take into view their whole performance, both in the ploughing field, and in drawing and managing the loaded wagon at the Hill, and their general appearance.

The Committee were unanimous in the opinion, that the first premium of *ten* dollars, should be awarded for the oxen of Isaac Osgood, Esq. of Andover.

They were of the opinion that the second premium of *five* dollars should be awarded for the oxen of Moses Pettengill of Topsfield.

But it was not so easy to determine how the second premium should be awarded as the first. The cattle owned by Dr. Nichols of Danvers, Valpy & Richardson, and George French, of Andover, all performed their task extremely well, and all so nearly equal, as to render it difficult to distinguish which should have the preference.

The number of pairs of steers entered for premiums, was larger than heretofore.

The Committee noticed three pair of four years old, six pair of three years old, three pair of two years old. No premiums were offered for steers of four years old, other than those for working oxen generally.

The Committee have awarded—

To Richard Heath, of W. Newbury, for 3 years old Steers,
1st premium, $10

To William P. Endicott, of Danvers, for do. do.
2d premium, $5

To William P. Endicott, for 2 years old Steers,
1st premium $5

The steers owned by Mr. J. H. Barker of Andover, were noticed by the Committee as being of very good quality.

The Committee also noticed the team of about one hundred and fifty yoke of working oxen, brought together by the farmers of Andover, and were much pleased with their appearance. It was indeed a *Cattle Show*. Such exhibitions have been common in some of the neighboring counties, but have not often been in Essex. The Committee think the citizens of Andover deserving much credit, for this part of the Exhibition—and

wherever the Show may hereafter be, they would be pleased to see something of the kind repeated.

Per order of the Committee.

STEPHEN BARKER, *Chairman.*

Sept. 29th, 1831.

No. XI. ON PLOUGHING WITH SINGLE TEAMS.

The committee, consisting of Erastus Ware, John Northend, Jonathan Ingalls, Daniel Johnson, and John Preston, to whom was assigned the Ploughing Match with one yoke of Oxen, Report—

That the land to be ploughed was divided into lots of about one third of an acre each.

There were five teams entered; but three came on to the work. They used Pike's improved plough, which did the work very well, considering the stubbornness of the land, both for stones and hard sward. The teams moved slow, necessarily, as the shortness of time being no object in comparison with good work. The ploughing was to be not less than five inches in depth, and flat furrows. Under these regulations the first lot was ploughed in one hour and thirty-seven minutes, the other two in two hours.

The committee unanimously agree to award the

1st premium (E. Peasly, ploughman) to Andrew Nichols, of Danvers, $10 00

2d premium, (Wm. Frye, ploughman) to Joseph Kittredge, of Andover, $8 00

3d premium, (Washington Winslow, ploughman) to John Pike, of Danvers, $6 00

Per order, ERASTUS WARE.

Andover, Sept. 29th, 1831.

No. XII. ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams, have attended to that duty, and ask leave to report—

That nine teams were entered for premium; eight only ap-

peared on the ground, and performed the work in the following manner, viz:

No. 1. Hobart Clark, of Andover, one hour twenty-three minutes, 20 furrows.

No. 2. Stephen Abbott, of Andover, one hour twenty-eight minutes, 20 furrows.

No. 3. Perley Tapley, of Danvers, one hour thirty-seven minutes, 26 furrows.

No. 4. Ralph H. Chandler, Andover, one hour twenty-eight minutes, 22 furrows.

No. 5. J. H. Barker, Andover, one hour seventeen minutes, 24 furrows.

No. 6. Moses Pettengill, Topsfield, one hour forty-two minutes, 25 furrows.

No. 7. Abijah Northey, Boxford, one hour twenty-one minutes, 24 furrows.

No. 8. John Adams, Andover, one hour five minutes, 23 furrows.

The work was so well performed by all the claimants, considering the situation of the land and quality of the soil, that the Committee would have found some difficulty in deciding, had not some failed in turning the last furrow. But after consultation, they were unanimous in the opinion that the premiums be awarded in the following manner, viz:

1st premium to Ralph H. Chandler, of Andover, $12 00
2d premium to Abijah Northey, of Boxford, $10 00
3d premium, Jedediah H. Barker, of Andover, $8 00
4th premium, Moses Pettengill, of Topsfield, $6 00

All which is respectfully submitted.

DANIEL ADAMS, 3d.

No. XIII. ON BULLS.

There were presented for premium thirteen Bulls, most of them indicating thrift and care.

Your Committee, after due consideration, award

To Joseph Poor, of Andover, the first premium, $15 00

To Samuel Jenkins, of Andover, the second premium, $10 00
To Joseph Symonds, of Boxford, the third premium, $5 00

The others were offered by Ralph H. Chandler, Moses Newell, William P. Endicott, Jesse Putnam, Ladd Haseltine, Stephen Tucker, Jacob Farnum, and Harrison W. Spofford.

Your Committee are of opinion that the Bulls in the pens were of a superior quality, but they are not at liberty to award more than three premiums.

JOHN ADAMS.

Sept. 29th, 1831.

XIV. ON SWINE.

The Committee have examined the Swine exhibited, and report—

That the animals presented were not equal to some former collections in the County.

The Committee recommend that there be awarded to Pierson & Gordon, the second premium of three dollars for a boar—there being no one exhibited worthy of the first premium.

They award to Pickering Dodge, Jr., of Salem, the first premium of five dollars for a breeding sow ; and the second premium, of three dollars, for pigs.

They award to George French, 2d, of Andover, the first premium, of six dollars, for pigs.

Considering the value of this animal to the farmer, in various points of view, and the very great difference in their quality ; and the manifest advantage to be derived from care in the selection of the best breeds of swine, the Committee cannot but be astonished, that so many of our farmers should be so indifferent and inattentive to a subject so intimately connected with their interest.

There have several times been fine exhibitions of swine at our shows, and the Committee confidently hope they shall again have the pleasure of seeing such.

Gentlemen who have animals of the best breeds should bring them forward ; and even if they are not paid in *dollars and*

cents, they will find an ample reward, in the benefits they confer upon their neighbors, by showing them the difference between such animals, and those *lank, raw-boned, long-shanked creatures*, too often to be found about our farmers' premises.

PAUL KENT.

Andover, September 29, 1831.

DR. SPOFFORD'S ESSAY ON IRRIGATION.

TO THE SECRETARY OF THE ESSEX AGRICULTURAL SOCIETY.

I feel that some apology is due to the Trustees for my long delay in fulfilling the appointment with which I was honored by them at their meeting in September, 1830: and have only to say that it was occasioned by a desire to obtain from a friend, then at a distance, some account of an experiment on a larger scale than any other which has come to my knowledge in this part of the country.

Some degree of knowledge of what constitutes the food of plants, seems indispensable to any well conducted system of producing them in the greatest perfection; and such knowledge seems most likely to be obtained by minutely examining their structure, and carefully observing the manner of their growth.

Plants constitute one of the great divisions of organic life, and one formed or constituted by systems of fibres and vessels, and endowed with certain powers and appetences which place them at a greater remove above unorganized matter, than they are below animal life; and appropriate nourishment is elaborated and a complete circulation carried on to the minutest extremity in a manner extremely analogous to the circulation which is carried on in the arteries and veins of the most perfect animals; and the apparent intelligence with which plants seek for nourishment, light, air, and support, appears in some instances to bear a strong resemblance to perception and knowledge: and the circulation of fluids in the vessels of plants and animals appears to be

carried on much on the same principles, and is perfectly involuntary in both.

The indispensable agency of *water*, in constituting the fluids, and carrying on the circulation in these systems of vessels, has been universally acknowledged; and could not be overlooked by the most careless observer, while he saw innumerable instances in which plants wither and dry for want of this substance. But while this universal agency has been acknowledged, it is believed that a very inferior office has been assigned to it, from that which it really performs. It has been considered as the mere vehicle which carried and deposited the nutritious particles of other substances, while it in reality was contributing much the largest portion of the actual nourishment to the plants, which annually clothe our earth in living green.

If this idea is correct, then he who possesses water at his command with which to supply his plants at pleasure, or who has a soil adapted to attract and retain moisture, in suitable quantities, possesses a mine of inexhaustible wealth, from which he can draw at pleasure, in proportion to his industry and his wants.

In proof of the abstract principle that water constitutes in a very large proportion the food of plants, I may be allowed to mention one or two accurate experiments of distinguished philosophers upon the subject, which appear to me to be quite decisive on the case.

"Mr. Boyle dried in an oven, a quantity of earth proper for vegetation, and after carefully weighing it, planted in it the seed of a gourd; he watered it with pure rain water, and it produced a plant which weighed fourteen pounds, though the earth producing it had suffered no sensible diminution."

"A willow tree was planted by Van Helmont in a pot containing a thousand pounds of earth. This plant was watered with distilled water or pure rain water; and the vessel so covered as to exclude all solid matter. At the end of five years, upon taking out the plant, he found it had increased in weight 119 pounds, though the earth had lost only two ounces of its original weight."

The experiments of Mr. Cavendish and Dr. Priestley have sufficiently proved that vegetables have the power of decomposing water and converting it into such fluids as they need for circulation in their own vessels; and that they elaborate from this substance, such juices and fruits as they are by nature calculated to produce.

The great effect which is so frequently observed to follow the formation of ditches from the road-sides on to mowing ground, is no doubt in part to be attributed to the manure which is thereby washed on to the ground, but is also in part owing to the more copious supply of water which it thereby receives.

That pure water is capable of producing similar effects I have the following experiments to prove.

Several years ago when resident with my father on his farm at Rowley, I labored hard to divert a stream, which fell into a miry swamp, from its usual course across a piece of dry upland. The stream was pure spring water, which issued between the hills about fifty rods above, running but just far enough to acquire the temperature of the atmosphere, but without receiving any more fertilizing quality than was obtained in passing through a pasture, in a rocky channel; the effect, however, was to double the quantity of grass. The same stream I again diverted from its course about forty rods below, after it had filtered through a piece of swamp or meadow ground, and with the same effect: and again still lower down its course, I succeeded in turning it on to a piece of high peat meadow which had usually produced but very little of any thing, and the effect was that more than double of the quantity of grass was produced, and that of a much better quality. I was led to this latter experiment by observing that a strip of meadow which naturally received the water of this run, and over which it spread for several rods in width without any particular channel, was annually much more productive than any other part of the meadow.

But the best experiment, and on the largest scale of any which I have known, was made by my late father-in-law, Dea. Eleazer Spofford, then resident at Jaffrey, N. H. . A letter from Rev. Luke A. Spofford, in answer to my inquiry on this subject,

observes: "My father commenced the experiment as early as the year 1800, and continued it till 1820, or to the time when he sold his farm. The last ten years of this time he flashed perhaps twenty acres; and it produced I should think twice as much in common seasons, and three times as much in dry seasons, as it would have done without watering. This land would hold out to yield a good crop twice as long as other land of the same quality"—(that is, I presume, without flowing.) "In dry weather he watered it every night—and the produce was good, *very good.*"

I am acquainted with the lot of land which was the subject of this experiment. It is a northern declivity, and rather a light and sandy soil, on the eastern bank of Contookook river; and the water used was that of the river—about one mile below its formation by the junction of two streams, one from a large pond of several hundred acres in Rindge, and the other a mountain stream, formed by innumerable springs issuing from the skirts of the Monadnock.

From the foregoing premises may we not conclude that water performs a more important office in the growth and formation of plants than has generally been supposed—and that it not only serves to convey nourishment, but that it is itself elaborated into nourishment, and thereby constitutes the solid substance; and we may further conclude, that every farmer should survey his premises and turn those streams which now are often useless or hurtful, on to lands where they are capable of diffusing fertility, abundance, and wealth.

It appears further that the immense fertility of Egypt is not so much owing to the alluvial deposit, brought down by the annual inundation, as to the canals and reservoirs in which the waters are retained, to be spread over the lands during the succeeding drought, at the will of the cultivator.

If, according to the experiments of Boyle and Van Helmont, almost the whole food of plants is derived from water, then the principal use of the various manures is to attract moisture and stimulate the roots of plants to absorb and elaborate it: and we have also reason to think that lands are much more injured and

impoverished by naked exposure to heat and wind, and washing by water that runs off and is lost, than it is by producing abundant crops.

In the present state of population, nothing more could be expected or desired than that every farmer should make use of such means as the small streams in his vicinity may afford; but in a densely peopled country, like Egypt in former ages, or China at present, it should doubtless be one of the first enterprises of a good government, to take our large rivers above their falls and turn them off into canals for the benefit of agriculture.

JEREMIAH SPOFFORD.

DIRECTIONS

FOR

THE CULTURE OF SILK, &c.

By the Committee on that subject.

In the prosperity of agriculturists the whole community are deeply interested. Whatever increases their profits, encourages their hearts, and stimulates their industry, adds more than any thing else to the permanent wealth of the nation. Every true friend of his country, must wish to see farmers better rewarded for their labour than they for several years past have been. It would seem that to effect this object, recourse must be had to the production of other commodities, in addition to such as are now generally grown in this county. At present, nothing seems to promise better than the culture of silk. For many centuries past this article has well rewarded its producers. And there is no probability, that the present or future generations, will hold it in less esteem. Like gold it possesses an intrinsic value, and will never cease to be in demand. Nothing yet discovered can supply its place, and there is no probability that any other article will ever supersede its use. The cultivation of white mulberry trees and the rearing of silk worms has enriched every people who have with patience and perseverance devoted a judicious portion of their labour to it. Can it fail to bestow like blessings on the free and industrious citizens of this Commonwealth? Farmers of Essex, can you longer hesitate? White mulberry trees, seed, and eggs, together with the necessary directions for managing the whole business, are now within your reach. Nor need the reward be so distant as you may at first suppose; a great many small trees will produce as much food for the worms as a few large ones. An acre of

ground planted in rows four feet asunder, the trees being set about one foot apart in the rows, would probably produce as many leaves in the third, fourth, or fifth year of their growth, as the acre covered with standard trees one and a half rods apart. As the trees increase in size, they may be thinned out.

The natural history of the silk worm is an interesting study, and will in itself reward the labour necessarily bestowed upon it, by those who would successfully manage these wonderful insects. This employment cannot fail to be an excellent school for young minds. So much depends on order, cleanliness and accuracy of management, that it must deeply impress on them the value of these virtues in all the concerns of life. The introduction of the silk culture among us, may, we think, also subserve the higher interests of morality and benevolence—by adding to the charms of rural scenery and to the delights of rural employments. Were it admissible to enliven a dull agricultural essay with a picture drawn from imagination, we should be tempted to portray young men and maidens, as gay and as true to love and duty as the birds which fill with melody the mulberry grove, making by their mutual aid and kind offices the culture of silk a most fascinating and delightful employment. As we contemplate the subject, the creations of fancy assume all the characteristics of real life. We see the bashful swain with downcast eye and palpitating heart, hand over the leaves which he has gathered to the *fair* manager of the laboratory, who receives with blushes the raw material, which is perhaps to be wrought by her own hands into some ornamental part of her own wedding garment. Again, we see the charms of rustic beauty heightened by the consciousness of independence, which beams from her countenance, when she looks on the proceeds of her own industry, and seems to say, 'I have not added to the embarrassments of my father's house, and shall be able to carry that which is better than *gold*, economy, health and industrious habits, into my husband's.

It is desirable that the culture of silk should become among us the incidental employment of females, boys and infirm people. Almost every family might rear a few thousand worms advanta-

geously. No buildings constructed expressly for the purpose will be necessary. "I have reared them with success, says Cobb in his Manual, recently published agreeably to a resolve of the Commonwealth, in a barn, in my cellar kitchen, and other rooms of my dwelling house, and in the lower story of the Tremont House in Boston. It was found in France that the cocoons brought to market by the peasants, raised in hovels so full of cracks as easily to be seen through and to admit the air freely, were richer and heavier than those reared in palaces and in the confined rooms of dwellings in cities." A well lighted dry, warm, airy room, is, however, to be preferred. An open fire place is desirable—for it not only serves at all times as a good ventilator, but in cold days, and even during warm, calm, sultry weather, a little fire may be occasionally kindled with advantage—on cold days to warm the room, and on warm, sultry occasions to remove the stagnant air and excessive moisture. In Europe their laboratories are furnished with stoves and the heat regulated by a thermometer. This, Cobb and others who have had much experience in rearing silk worms in this country, consider unnecessary. A uniform temperature of about 73 degrees of Fahrenheit is thought to be most favorable to perfect success. Greater heat, especially if accompanied with a damp, sultry atmosphere, produces sickness, and if it occurs near the completion of their growth a coarser product. The finest and most valuable silk, as well as the largest quantity, is produced by the most healthy worms, during fine weather of the temperature above named. Hence a climate as cold at least as ours, we have been told by a silk manufacturer from Spain, is most favorable to the production of fine silk. The inferiority of Spanish silk to that of some other parts of Europe he attributed to the greater warmth of the Spanish climate.

Natural History of the Silk Worm.—The phalena moth or silk butterfly is about an inch long and nearly an inch and a half between the extremities of its wings when extended. The body is obscurely white and thickly covered with short hairs—it has two antennæ or feelers, and four transparent wings of the color of the body, flat and incapable of dilatation or contraction; it

has two black convex eyes, placed on each side of the head, rising above it rather more than a hemisphere. When examined with a microscope, these eyes prove to be of the most wonderful and admirable structure—each eye is composed of about three thousand six sided lenses as clear as crystal. The female is larger than the male, and is otherwise marked somewhat different from the male. The male performs all the duties of its life within forty-eight hours after he escapes from the cocoon, and dies a few days afterwards. The female lays from two to five hundred eggs within forty-eight hours, and soon dies also. The butterfly takes no food, but devotes its whole strength and life to the propagation of its species. Wonderful insect! Its six thousand optic lenses sparkle with a transitory lustre,—its nerves, most exquisitely strung, thrill with delight a few hours only,—it dies! but leaves the world a rich legacy. The care of this legacy—the management of its eggs, now demands our attention.

The Eggs.—The eggs are of a small size. When first laid they are of a pale yellow color, but in three or four days turn to a dull, brownish, slate color. Those which remain yellow, have not been fecundated and are worthless. The most proper place for keeping the eggs until they are wanted for hatching, is a cool, dry cellar—in a tight box to protect them from mice and insects. The heat of the place in which eggs are kept must not exceed 65 degrees,—a temperature above this hatches them. Nor, it is said in books, must they be kept in a temperature below 32 degrees, "for if they should freeze, the principle of life would be destroyed." But can this be true? "I saw," says Cobb, "at Philadelphia, a few worms which were raised from eggs laid on the outside of a brick wall, in a northern exposure, which had stood all the severity of winter," 1831.

Hatching, &c.—The season for hatching the silk worm is said by European authors to be as soon as the mulberry puts forth its leaves. This is doubtless the best rule where the worms are to be fed from full-grown standard trees. But where the leaves are to be stript from young trees, standing either in nurseries or plantations, it will be well to wait a few weeks longer—until the more vigorous growth of these trees be-

gins to throw out lateral branches and suckers, which may be taken with less injury to the tree. All things being ready, bring the eggs from the cool depository in which they have been kept, into a room, where the temperature or heat is constantly above 65 degrees. They will begin to hatch in from six to twelve days, according to the mean degree of heat to which they are exposed. Cobb says, "they hatch in a day or two after the exposure." The writer of this essay hatched them the last season in six, seven and eight days—during very hot weather in July. Perhaps a different length of time or quantity of heat may be required to hatch different parcels of eggs—according to the different degrees of heat or cold to which they have been exposed during the preceding winter, or to something else in the previous management of them not well understood. Be this as it may, the eggs should be watched daily, and as soon as the worms begin to appear, strew over them tender mulberry leaves, to which they will immediately betake themselves. Take hold of the leaves carefully and remove them to the shelves, on which they are to be kept. It is important to economical management, to know exactly the number of worms. This is the best time to count them—mark the number on each leaf as removed and thereafter keep a journal of deaths as correctly as possible. In very large establishments the number of worms is estimated by the weight of the eggs. An ounce of good eggs produces about 35,000. The worms hatched on one day should be kept together and separate from those hatched on any other day, that they may pass through their several changes or moultings at nearly the same time.

Moultings, &c.—There are several varieties of silk worms. The most common change their skins four different times, viz. on the fourth or fifth day after hatching, on the eighth or ninth, on the thirteenth or fourteenth, and on the twenty-second or twenty-third days. These changes are called moultings, and the intervening times, ages. The fifth or last age continues about twelve days, when they cease to eat and prepare to form the cocoons. Thus 32 days intervene between the hatching and the formation of the cocoon. The several ages, however,

may be protracted by cold or other bad weather, or by irregular or scanty feeding. I have known, says Cobb, the period retarded to sixty days. These changes should be noticed. When about to change their skins, they hold up their heads and appear to sleep. As this condition approaches they eat but little and should be fed accordingly. As soon as the change is completed, they become active and voracious.

Apparatus, &c.—The worms being hatched suitable tables or shelves must be prepared for their reception. These should be so constructed and placed, that birds, fowls, rats, mice, spiders and ants, cannot gain access to them. To prevent this, nail lathes across the windows and let the shelves be supported on small posts or legs which rats and mice cannot climb, besmeared with tar or other substance, over which spiders and ants cannot pass, and placed in the middle of the room. These shelves may be made of rough or planed boards, covered with paper, or what is better, of wicker-work,—that is, a frame filled with small rods, (about one quarter of an inch apart,) these to allow the free circulation of air and permit the litter and excrements to fall through to a sliding shelf placed below it. By this apparatus nearly all the filth may be cleared away without disturbing the worms. Care must be taken, however, while the worms are small, not to throw them away with the litter, as some of them may fall through with it. The most simple and best contrived shelves, are low tables with legs about a foot long at the corners, set one upon another. In making these tables the lower one should be about six inches longer and broader than the one next above it, so as to break the fall of such worms as happen to tumble down. A square foot will afford sufficient space for fifty full grown worms. In the first age the worms will require only one-twentieth of this space, in the second age one-tenth, in the third one-fifth, and in the fourth one-half. The mean width of the shelves should be about two and a half feet, of any length that will admit of a free passage around them.

Food, &c.—Mulberry leaves are said to consist of five different substances. 1st, the solid fibrous substance: 2d, the coloring matter: 3d, water: 4th, a sweet mucilaginous or sac-

charine substance: 5th, a peculiar resinous substance, of which the silk is formed.

The saccharine matter nourishes the insect and forms its animal substance. The resinous matter, assimilated in the silk vessels of the worm, forms the silk. Other leaves, besides the mulberry, such as lettuce, dandelion, rose leaves, &c. possess a similar saccharine matter, and silk worms it is said may be fed on them for two or three weeks with success—but in the last age mulberry leaves are indispensable. Although the worm grows well on other food, the silk vessels are not filled with the peculiar resin, and no silk can be produced. From this fact, and from the examination of mulberry bark, which contains numerous fibres, closely resembling in strength and appearance silk, we have been led to believe, that the silk substance exists ready formed in the mulberry; and that the silk worm is only a skilful manufacturer who perhaps adds to it an animal gluten which in some measure modifies its qualities, and spins it into threads. If this be the case, it will be in vain to search longer for a substitute for the mulberry, in any other vegetable, which does not possess similar silk like fibres in its structure. The leaves of the black mulberry are said by some writers to be more nutritious than the white, although worms fed altogether on them will not make so much good silk, as when fed during the last age on the white mulberry. The Chinese mulberry, if we may believe the accounts given of it, is superior to all others for the silk culture. A few of these trees are now cultivated in several nurseries in this country and probably may be rapidly multiplied by grafting or budding. Young, tender, succulent leaves are most suitable for worms in their first ages. In the last, full grown leaves of the oldest trees are to be preferred, as these contain the largest quantity of the silk resin. In the last age no change should be made in the kind or quality of the food. The leaves should always, when possible, be picked in fair weather, after the dew has evaporated; wet leaves are very injurious to the worms. Hence it is necessary to keep on hand sufficient leaves for three or four days, gathered and preserved in a covered glazed or tin vessel, in which they may be kept perfectly sweet

and fresh, provided they are taken out and exposed to the air a few minutes daily. Another resource is dried mulberry leaves, reduced to powder, and when used slightly moistened with water. Young worms are said to eat this preparation with avidity. If so it would be very economical to gather most of the leaves remaining on the trees just before the frosts of Autumn. At this time, little or no injury is done trees by stripping them of their foliage. Let the leaves gathered at this time be dried in the sun and pressed into cakes in the manner Shakers preserve medicinal herbs, and reduce them to powder the following season when wanted for use.

Feeding, and management generally.—The appetite of silk worms is somewhat affected by the weather and other circumstances which vary in different cases. The quantity of food therefore required for each day cannot be precisely determined. It must be however of some use to know the quantity of leaves required during each age, as nearly as possible, so that no waste be made by gathering more leaves at once than will be wanted during the time in which they can be preserved fresh. We accordingly find, in European manuals, directions as to the precise quantity of leaves, by weight, which is to be given every day, from the hatching of the worms until they form their cocoons. One of their tabular statements of the daily proceedings in the culture of silk, we shall annex, believing that although it may not always be necessary or best to follow it in every particular, that it will serve as a valuable guide to the inexperienced in this new employment. Printed on a separate sheet it may be detached from the book and posted up in the laboratory, or room where the silk worms are kept.

The worms must be kept clean. During the first age, although it will be proper to spread sheets of paper—old newspapers will answer—over the shelves composed of wicker-work, to prevent the little creatures from falling through and getting lost with the litter. They will need cleaning only twice.

The litter is to be taken away in the following manner. Scatter some fresh leaves over one quarter or one half of the shelf—to these the worms readily attach themselves. These

leaves with the worms adhering to them, are then to be carefully taken up and removed to a clean place. Then clear away the litter from that portion of the shelf, and remove to it the worms from the adjoining part in the same manner. Or remove them to a paper on a side table—take away the paper containing the litter from which the worms have been removed and put the paper on which they now are, in its place. During the first and second age, feed the worms with young and tender leaves of mulberry, lettuce, or some other substitute. During the third age full grown leaves may be used, reserving however the largest and toughest, till the last age when they are most voraracious. As they advance in age, more and more food will be required, and the oftener the litter must be removed. By these means the health of the worms will be preserved and the process sooner brought to a conclusion. In the the fifth or last age, they should have new leaves as often as the previous supply is consumed, until they are observed to creep over the leaves without eating. Silk worms eat and work by night as well as by day—in their last age they should be well *foddered* at bed time. You may know when the worms are ripe, or ready to rise and form their cocoons, by observing them with attention. They now look transparent, of the color of the green gage plum, are somewhat diminished in size,—they wander about without eating and try to climb.

Before the worms begin to mount and spin their cocoons, they void their excrements. Feeble worms, that have not strength for this, die in the attempt, and many worms are sometimes lost at this period—they should at this time be kept as clean as possible, and the dead worms removed as soon as discovered.

No bad smells, no smoke of tobacco or any thing else should ever be allowed to corrupt the pure air of the laboratory.

Diseases of Silk Worms.—The diseases of silk worms generally arise from the want of sufficient air and space—from not being kept clean and dry—from irregular feeding—damaged food—the fermentation of their litter—damp and bad air, &c. Great care in regard to these particulars is required during the

whole term of the insect's existence as a worm. Pure food, pure air and sufficient space will generally keep them healthy and vigorous. Should, however, some general sickness shew itself among them, they should be removed into another room—to other shelves and a purer air—or the shelves should be thoroughly cleansed and the air of the room purified by the use of the Chloride of Lime or Chloride of Soda. This article may be obtained at the apothecary's. It may be used according to the directions usually sold with it for disinfecting silk worms.

Preparation for the Cocoons, &c.—Previous to the rising of the worms, little arches or cabins should be formed between the shelves by setting up brush wood, broom corn, or what Cobb prefers, small branches of oak, cut and dried a few days previous, with the leaves on, with their tops spread and pressing against the bottom of the shelf next above that where the worms have been fed, and which supports the stems of the brush. The worms will readily climb these little trees, and spin their cocoons in them. Each worm will be three or four days spinning the cocoon. All fed on the same shelf, will generally finish their work in eight days—from the time when the first began to spin. The brush may be then taken down, the cocoons taken off—the floss or loose tow picked off from the brush and from the cocoons—which must be saved and manufactured like cotton or wool by carding and spinning.

Management of the Cocoons.—A selection must be made of the cocoons which are destined for seed and those which are to be sold or manufactured. The best should be preserved for seed. They are distinguished by their straw color, their greater hardness, chiefly at the extremities, and by the superior fineness of their web. The best are a little depressed in the middle as if tightened by a ring, and they are not the largest. There are no certain signs to distinguish the cocoons which are to produce the male moth, but experience teaches that the smaller which are sharper at one or both ends and most depressed in the middle, generally produces a male, and that a round full cocoon contains a female. Could it be well ascertained which are male and which are female, it would be well to preserve double the

number of the latter. These cocoons, stripped of the floss, may either be spread on a shelf or strung upon a thread, care being taken not to pierce entirely through the cocoon—and hung up till such times as the moths or butterflies come out, which will take place in twelve, sixteen or twenty days—in proportion to the degree of heat of the room.

In the cocoons designed for the manufactures, the chrysalis or living insect within them, must be killed within ten days after their formation, or the silk will be greatly injured. This may be done by placing then in an oven moderately heated or in the steam of boiling water, or they may be put into a tin vessel with a cover and this vessel set in boiling water for a half hour or more. The cocoons are then spread and dried. After this operation the cocoons are ready for the reel or sale. If the culturist should undertake to reel the silk, however, it would be better to do it before the insect naturally pierces them—because the silk winds off more easily than afterwards. In being cured they lose about twenty five per cent in weight.

Management of the Butterflies.—As soon as the butterflies come out of the cocoons, they attach themselves to their mates. After they separate or can be readily separated the males should be taken away and shut up in a box—the females placed on cloth or sheets of paper, allowing to each about two square inches. They will begin to lay their eggs in twenty four or thirty six hours, each producing three or four hundred eggs, which they attach to the cloth or paper, in close and regular order. On the day following, the same males may be allowed to pair with other females should there be a larger number of the latter than the former. From the time they pierce the cocoon they should be kept in a dark room or one from which the sun and much of its light is excluded. As soon as the butterflies on one sheet have done laying their eggs it should be folded up and put in some cool dry place until wanted for use the next summer. If kept in a cellar, the eggs should be occasionally, on cool drying days, taken out and exposed to the air, to prevent the injurious effects of mould which would otherwise soon cover them. Should the eggs remain exposed to the hot weather, they will sometimes

hatch the same season. The butterflies eat nothing after leaving the cocoons, and die in a few days after depositing their eggs, and may be given to fowls.

Estimates of Profits, &c.—An acre of mulberry trees, five years old, will yield without greatly retarding their growth two tons of leaves weighed as taken from the tree. This will afford sufficient food for seventy five thousand worms. Seventy five thousand worms, successfully managed, will make two hundred pounds of cocoons, equal to twenty-five pounds of raw silk, worth at the lowest price seventy-five dollars. The same manufactured into sewing silk, would be worth at least one hundred and twenty five dollars. According to the calculations of the silk culturists in Connecticut and Philadelphia, the worth of the leaves and labour may be estimated as follows:—

4000 lbs. of leaves on the trees at half a cent per lb.		$20
Labour in gathering the same,		20
Labour in feeding and managing the worms,		20
Cost in worms,	60	
Profit,	15	
Reeling the silk,		10
Spinning the same,		20
		9
Sewing silk at $5 per lb.		125
Profit,	35	

John Fitch, Esq. of Mansfield, Connecticut, estimates the produce of an acre of full grown mulberry trees, set one and a half rods apart, at forty pounds of silk, worth $200

Labour and board, 114

Net profit, 86

Mr. J. D'Homergue, a French gentleman now in the United States, who is said to be perfectly well acquainted with all the details of the silk culture and manufacture, makes the following estimate. "In one acre of land there are 43,560 square feet, on which may be planted 3,000 mulberry trees. These will yield, at the age of seven years, 90,000 pounds of leaves

producing 7,500 pounds of cocoons. At twenty-five cents per pound, these cocoons would sell for 1,875 dollars. In Mansfield, (Conn.) where from three to four tons of silk are made annually, it is said that the farmers "consider the amount received for their sewing silk as so much clear gain, as the business does not interfere with the regular farm work of the men or the domestic duties of the females upon whom, with the aged and youthful members of the family, the care of the worms and the making of sewing silk chiefly devolves." Those farmers whose families contain no youthful or aged members, or females without full employment, should not be deterred from planting mulberry trees, as we trust there will soon be in every town and parish, establishments where all the leaves raised in the vicinity will find a ready market at a cent per pound ; and while the trees are growing, perhaps sons and daughters may spring up to bless their provident parents ; orphan or indigent relatives may find beneath their hospitable roofs a home, and even the now robust and athletic may possibly become infirm and old, when the rearing of silk worms might perhaps afford them just such employment as they may most need, either for recreation or support.

REELING AND MANUFACTURING SILK.

"Those who do not choose to proceed any farther in the silk business than to raise the cocoons," says Cobb, "may realize a reward for their industry by selling the silk in that shape. There is no doubt but there will soon be established throughout the United States a regular market price for the article. But as raw, that is, reeled silk, is the shape in which the article must be sent to foreign manufacturers, if exported, and in which it meets with a cash market in almost every part of Europe, and in many parts of our own country, it becomes of great importance that we should reel the cocoons at least, and that in the most economical and profitable manner." The reeling of silk from the cocoons requires skill, practice, and experience. But let none be

easily discouraged; perseverance and attention for a short season will enable them to become expert at the business, although the result of their first efforts may seem discouraging.

In European establishments, an extensive apparatus is used in reeling silk, but we in America are not obliged to follow their methods. The ingenuity of our countrymen will soon arrange a reeling apparatus by the family fireside, and that part of the year which cannot be employed in rearing the worms, may be in part devoted to reeling the cocoons to any pattern or degree of fineness. There is no more difficulty in it than there is in the manufacture of straw and many other articles, which now employs great numbers of our industrious females. In light manufactures, what others have done well, our ladies can do *as well or better.*

In preparing to reel the silk, the first thing to be done, is to sort the cocoons. The French make nine or ten qualities. "Before the cocoons are reeled, it is necessary to free them from that loose, fuzzy silk, which is on their outside, and is called floss; it being of so fine and loose a consistence, and partly broken by taking it from the branches, or frames, where the worms had spun them, that it cannot be reeled off. It may be taken off by opening it on one of the ends of the cocoons, and then thrusting out the hard part of them, clearing off, at the same time, the loose silk adhering close to them, and mixing this part with the floss, to make ordinary cheap silk. Then sort the cocoons according to their different degrees of hardness. If the strong, the tender, and the double ones are mixed, the trouble is not only greatly increased, but, in reeling, the threads frequently break, and the value of the silk is thereby lessened. For the proof of this, let us suppose only two cocoons, one compact and hard, and the other of a loose and soft substance, thrown together into the hot water, in order to be reeled off together, and to make one thread. If, now, the water be sufficiently hot to let the hardest of the two cocoons wind off with ease, by dissolving its gumminess, then that water will be too hot for the other, the substance of which is loose, so that it will run off in burrs; that is, flakes of the silk will come off without being drawn to their ex-

tent; which burrs, as they pass the guide-wires, will endanger the breaking of the thread, filling it also with lumps and inequalities. On the other hand, if the water be of the proper temperature for the soft cocoon, so as not to occasion the above inconvenience, it will then not be hot enough for the hard cocoon, so that its thread will not be given off, without some stretch and violence, which endangers its breaking, and giving the trouble of adding a fresh cocoon; and, in both cases, the single fibres of the cocoons being unequally stretched in reeling, will make the combined thread the weaker, and less even and glossy; since the single fibre of that cocoon which was most stretched by the reel, will, upon disbanding, contract itself more than the other, and be separated from it in some places. On these accounts, having first separated the double cocoons, and also those which contain nothing but floss, with any others, which, being imperfectly formed, cannot be reeled, sort the perfect cocoons into three kinds, according to their different degrees of hardness, which can be readily perceived, and throw them into three different baskets.

"The cocoons may be divided into two general heads, or classes; the white and the yellow. In the yellow, we meet with all the shades from a bright yellow, diminishing, at last, to white; some few are a pale green. We may reckon nine different qualities of cocoons, which are met with, more or less, in all filatures or reeling establishments.

"1. The good cocoons are those which are brought to perfection, and are strong, hard, of a fine grain, and little or not at all spotted.

"2. The pointed cocoons are those, of which one of the extremities rises up in a point. After having afforded a little silk, the point which is the weakest part, breaks, or tears, and it is impossible to continue to wind them any longer; because, when the thread comes round to the hole, it is, of consequence, broken, and the whole contains nothing but ends.

"3. The cocalons are a little larger than the others; yet they do not contain more silk, because their texture is not so strong.

"4. The dupion, or double cocoons, are so called, because they contain two, and sometimes three worms. They interlace their threads, and make the silk called dupion.

"5. The soufflons are imperfect cocoons, the contexture of which is loose, sometimes to that degree that they are transparent, and bear the same proportion to a good cocoon, as a gauze to a satin. These cannot be wound.

"6. The perforated cocoons are so called, because they have a hole at one end; for which reason they also cannot be wound.

"7. The calcined cocoons are those in which the worm, after the formation of the cocoon, is attacked with a sickness, which sometimes petrifies it, and, at other times, reduces it to a fine white powder, without in the least damaging the silk. On the contrary, these cocoons produce more silk than the others, because the worm is lighter. They are to be distinguished by the noise the petrified worm makes when the cocoon is shaken. In Piedmont, they sell for much more than others. It is very rare to see a parcel of 25 lb. of them at a time: 6 lb. 3 oz. of these cocoons have produced 1 lb. fine silk, of five and six cocoons.

"8. The good choquette, consists of those cocoons in which the worm dies before it is brought to perfection: they are to be known by the worms sticking to one side of the cocoon, which is easily to be perceived, when, on shaking it, the chrysalis is not heard to rattle. These cocoons are of as fine silk as the others, but they are to be wound separately, because they are subject to furze out, and the silk has not so bright a color, nor is it strong and nervous.

"9. The bad choquette is composed of defective cocoons, spotted or rotten; many of these cocoons may be wound together; they make very foul, bad silk, of a blackish color.

"To judge whether a cocoon be good, observe if it be firm and sound; if it has a fine grain, and the two ends round and strong, and capable of resisting pressure between the thumb and finger. The cocoons of a bright yellow yield more silk than the others, because they have more gum; but this accounts to the winder only, because all the gum is lost in dying. Pale cocoons

have less gum, lose less in winding, and take a better white or pale blue.

"To the foregoing kinds of cocoons, another is mentioned in recent French works, and called sattiny. Its tissue is coarse and like flannel, and the surface shines. The silk of this cocoon is bad."

Perhaps it may not be necessary generally to make so many kinds; but by studying the foregoing, every one may be enabled to select such as will reel well together. The most simple but not the best method of reeling and manufacturing silk is that practised in Connecticut, as described by Cobb :—

"In the first place the cocoons are stripped of their floss and sorted according to their quality. Then a large kettle set in a furnace or in an arch is filled with water, and a fire is kept under it; and when it is about to boil a quart of cocoons is thrown into it. They are immediately stirred perpendicularly in the water by a bunch of broom-corn tied close together as large as a person's arm, and cut square at the end, or by a corn broom, or something similar. In this way the ends are collected and attached to the bushy extremity. They are then drawn up by shaking the broom or whatever they are collected with, up and down in order to keep the cocoons in the water, otherwise they would rise. If enough for a thread is not collected the first time, those ends that are drawn up are taken off the bush with the hand and drawn to one side of the kettle. The process is then repeated until a sufficient number is collected to form a thread of the size required, which is usually from eighty to one hundred and fifty cocoons.

"Reeling is then commenced on a common hand reel, (such as is in common use in families in New England for reeling yarn from the spinning wheel), and the silk fibres run off about as fast and with as little difficulty as yarn from a spindle. Some of the cocoons run off before others; and when on this account the thread becomes too small, all the fibres are broken off, and what is reeled is tied by itself on the reel and another quart of cocoons is thrown into the kettle; the ends are collected and reeled in the same way as before, and each separate piece is tied by it-

self. When the reel is full the pieces are all tied together, taken off and immediately dried.

"Most of this silk is manufactured into sewing silk and twist in the following manner:—it is immersed for a few moments in boiling water, taken out, put on swifts, and spun or twisted on a common woollen wheel, beginning at the large end of the piece, that is at the end which was reeled first; and when it becomes too small, which is the case when half or two thirds is run off, the small end of another piece is added to it, and thus they are twisted together. It is then spooled directly off the spindle; a sufficient number of spools is put into a small spool frame to make a thread of proper size, which is twisted again while it is moist. It is then reeled again and cleansed by boiling in strong suds for three hours, then dried and colored. Undergoing this process it shrinks about one half in weight; after this, for sewing silk, it is doubled, twisted, and reeled on a reel two yards long, and is divided into skeins of twenty threads each, as the statute of that State requires. If it be calculated for twist, it is made three threaded, twisted and done up into sticks with a small hand machine, and is then ready for the market. The floss, or tow, as it is called, is boiled in strong suds for three hours, dried, picked, carded, and spun on a common wool wheel. The yarn is woven into cloth, which is worn by the women for every day gowns. It is sometimes manufactured into very strong and durable carpets.

"Those cocoons that the grubs have pierced are boiled as above and dried. The end that is not pierced is cut off; they are then spun on a linen wheel like worsted, beginning at the end cut. It is then twisted together, three threaded, and knit into stockings.

"The imperfect cocoons, and all that will not reel, are boiled, carded, spun and manufactured in all respects like floss, but they make nicer and finer cloth.

"The Connecticut sewing silk does not bring a higher price than the reeled silk as it comes from my reel. As there is a loss of one half of the weight in the preparation of sewing silk, it is evident that to reel it properly and

sell it for raw silk would bring a hundred per cent more profit."

A better method is to use a different kind of reel. Several reels differing somewhat in their construction although made on nearly the same principle, are in use in this country, for descriptions of which we would refer our readers to Cobb's Manual, Rush's Letter to the 20th Congress, &c. &c. Whatever reel is used, the different layers of silk must not be permitted to be parallel to nor upon but cross one another. Without this crossing, the threads from their gummy nature would inevitably adhere and render the subsequent windings and twisting of the silk very difficult. This sticking together of the silk is called glazing. The mechanism of the reels above mentioned prevents the threads lying over each other on the reel till after it has made many revolutions and former threads have dried, and hence no adhesion takes place between them.

"The reeling may be done at any season, but best in dry weather; it may be carried on in the dwelling-house or in a shed, or other convenient out-building.

"The softest water should be chosen for soaking the cocoons. The proper temperature cannot be ascertained until the reeling is commenced, owing to the different composition of the silk. It is as well to raise it to near the boiling point, and then, if necessary to lower it, cold water may be added. The soft or satiny cocoons require water less heated than the others. If too hot water be used they furze out in unwinding. The dupions or double cocoons require the hottest water. The fire under the basin may be lessened or increased, as the occasion may require; a little attention will soon enable the person who has the management of the basin to preserve the water at the proper degree of heat. The reeling is effected by use of a silk reel, and a basin of water set over a moderate fire in a small furnace. The person charged with the management of the cocoons in the basin must be provided with a small whisk of broom corn, or birch twigs, cut sharp at the points; and being seated behind the basin, previously filled with hot soft water, and placed upon a furnace, containing burning charcoal, she must throw into the

water a handful of the cocoons, and press them gently under the water for two or three minutes, in order to soften the gum of the silk, and thereby to loosen the ends of the filaments. She is then to stir the cocoons with the end of the whisk as lightly as possible, until one or more of the fibres or filaments adhere to it; when, disengaging it, and laying aside the whisk, she is to draw the filament towards her, until it come off quite clean from the floss which always surrounds the cocoon, and the fine silk begins to appear; then breaking off the thread, and collecting the floss first taken off, she must put it aside; the whisk is then to be applied again to get hold of the firm fibres, and again, until a sufficient number are procured to form the thread of silk required to be wound off. This done, she is to unite a number of the fibres, according to the fineness of the intended thread, and deliver the compound thread to the reeler, who puts it through the guides; another thread is in like manner to be prepared and passed through the other guides, when two skeins are to be wound, and they may be crossed; the threads are then raised forward and made fast to one of the arms of it.

"Both threads being fastened to the reel, it is to be turned with a regular, even motion, at first slowly, until the threads are found to run freely and easily; for it will happen that some of the ends which were taken to compose the thread were false, because on taking off the floss there may be two or three breaches made in the beginning of the fibres, which, in winding, will soon end, and must be added anew to make up the number designed for the thread.

"It is proper, therefore, in the beginning of the thread, to put a few more cocoons than it is intended to continue, as they will soon be reduced to the proper number. The crossing of the threads is considered an improvement, though it is sometimes reeled without crossing.

"As soon as the pods begin to give the threads freely, the reel is turned with a quicker motion. If the pods leap up often to the guide, the reel must be slackened, and the spinner may let the thread pass between the thumb and finger before it reaches the guide. If the thread comes off in burrs, it must be

turned quicker. The fire may at any time be increased or diminished, as found necessary, that the reel may be allowed a proper motion, which ought to be as quick as possible without endangering the breaking of the thread, or hurrying the spinner, so that she cannot add fresh cocoons, as fast as the old ones are ended. The quicker the motion of the wheel is, the better the silk winds off and the better the end joins to the thread. One might imagine that the rapidity of the motion might overstrain and break the thread; but from constant experience it has been found that the thread never breaks from the rapidity of the motion; but on the contrary, the quicker the motion is, the more advantageous it is for winding the silk.

"While the reel is turning, the spinner must continually add fresh fibres to each thread as fast as she can find the ends, not waiting till some of the number she began with are ended, because the internal fibres are much thinner than those constituting the external layers, but must constantly prepare fresh ends by dipping the whisk among fresh cocoons, of which such a quantity must be occasionally thrown into the basin as will suffice to supply the threads which are reeling, but not more.

"The cocoons thrown in must be often forced under water that they may be equally soaked, for as they swim with their greater part above water, that part would remain hard and stubborn, while the part which is under water would be too much soaked; some hot water may be thrown upon them frequently with a brush, and also on the cocoons which are reeling, when they grow dry at the top and yield the fibres with difficulty. The supplying fresh ends when the cocoons are exhausted, or diminished, or the fibres break, is performed by taking one end of a fibre and throwing it lightly on the one that is winding, and rolling them between the thumb and finger, or gently pressing them.

"As often, therefore, as the cocoons partially wound, are exhausted, or the fibres break, fresh ones must be joined to keep up the number requisite, or the proportion; thus three new ones may be wound and two half wound, or four new ones, and the silk will then be a thread of four or five cocoons. The adroitness in adding fresh ends can only be acquired by practice. The

difficulty of keeping the thread even is so great, owing to the increased fineness of the fibre inside, that we do not say a silk of three or of four or of six cocoons, but a silk of three to four, of four to five, and of six to seven.

"In coarser silk we do not calculate so nicely as one cocoon more or less; we say for example from twelve to fifteen, from fifteen to twenty cocoons. In beginning a thread of ten cocoons, from sixteen to twenty will sometimes be required to preserve a uniform thread, after a portion of the first layer has been wound off. The quantity of silk which can be reeled in any given time, is in proportion to the quickness with which the spinner can add fresh cocoons. Thus, if we suppose that every cocoon at a medium, will either break or be wound off at the end of every five hundred feet, then, if five such pods are reeled together, one will be wanted to every hundred feet that are reeled; if ten are reeled together, one will be wanted at every fifty feet; if sixteen together, then at thirty-one feet, and so on. The seldomer cocoons end, or break, the greater number of them can one spinner attend, which shows the advantage of sound cocoons and of expert management in reeling.

"The cocoons which wind off in part only and the shells must not be permitted to remain in the water, as they will obscure and thicken the water, and injure the color and lustre of the silk, which can then be used only for dark colors. The shells should be buried to prevent their being offensive; as a general rule, the water should be changed as soon as it becomes discolored.

"When the spent cocoons leap up and adhere to the guide wires, they must be immediately taken away, else by choking the passage they will endanger the breaking of the thread.

"When the reel has remained any time idle, the thread between the basin and the wires may be wet, to cause the thread to run easily.

"In winding off the best cocoons some defective ones will be found amongst them which will not wind off or are full of knobs; these should be taken out of the basin immediately in order to be wound by themselves.

"The breaking of the fibres is principally owing either to bad

cocoons, viz. being ill formed, (as they will be when the worms were disturbed and interrupted during their spinning,) or the fibres may break by improper regulation of heat in the water; first, when it is not sufficient to make the silk come off easy, or second, when it is too great and occasions burrs, which may stop at the holes through which the thread runs; cocoons also which have two worms inclosed will perpetually break; the whole thread may also break, by burrs stopping at the holes of the guides, or by the reel being turned by jerks. It may be fastened like the fibres, by laying the parts on one another, and giving them a little twist.

"A sharp fork may be conveniently made use of to draw away the spent cocoons, or such as being nearly spent, stick at the holes in the guides; and as the whisk will frequently take up more ends than are immediately to be added, and as the spinner will sometimes have occasion to employ both her hands, the brush may at that time be conveniently hung up by the basin, while the cocoons which are attached to it remain in the water, and the ends will be in readiness as they are wanted. If the spinner be under the necessity of leaving off work for any length of time, the cocoons should all be raised with a skimming dish out of the water till her return, otherwise by oversoaking they would wind off in burrs; but it is best to continue the reeling without interruption, and to let fresh, but equally experienced persons, succeed those who are tired. The person who turns the wheel should have an eye to the threads and to the guide wires through which they pass, that he may apprise the spinner when any thing is wrong; for her eyes will be sufficiently employed about the cocoons. The reeler may also rectify anything discovered to be amiss in those parts of the thread which are near the reel, for one hand will always be employed, and a stop must occasionally take place.

"As the heat of the water in the basin will require to be varied according to the ease or difficulty with which the different sorts of cocoons give off their silk, the spinner should always have some cold water within reach, in order to cool that in the basin quickly, when the silk comes off too easily and in burrs.

The water is also necessary for the woman managing the cocoons, to cool her fingers. More fuel should also be at hand to increase the heat quickly, when the cocoons do not give off their silk readily.

"If there should happen to be any sand in the water, the heat causes it to rise to the surface and fix on the cocoons, the thread of which will break as if cut; for this reason the utmost care must be taken to guard against it, and to remove it. Previously to being boiled, the water should be permitted to settle, and the pan must be carefully wiped. If necessary, the basin may be covered while the water is heating.

"When the cocoons are first put in water, if the silk rises thick upon the brush or comes up in lumps, it is a sign that the water is too hot; if the thread cannot be caught, the water is too cold: when the cocoons are in play if they rise often to the guide wires, the water is too hot: if the cocoons do not follow the threads, it is too cold.

"Mr. Nouaille says, that a woman at Novi, (Italy,) experienced in the business, with the assistance of a girl to turn the reel and attend to the fire under the cauldron, can with ease reel off one pound of silk consisting of four or five cocoons of the most perfect quality in a day. I am credibly informed that the price of silk reeled according to the above directions, in Europe, is from four to seven dollars, according to its fineness. Mr. D'Homergue says a woman may now reel three pounds in a day. Mr. Brown thought he could reel a pound in a day upon my improved reel, but I have never been able to have the finer qualities of silk reeled so rapidly in my family. The silk reeled upon my reel* sells for $4,50 per pound as it comes from the reel, and some at a higher price. My reel is similar to the Piedmontese, with some considerable improvements; it is finished in a much neater style than any I have seen in this country; it is portable and will be furnished to any who may apply, for the sum of twenty-five dollars.

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*The fringe of the curtains in the house of Hon. Daniel Webster of Boston, was made by Mr. Brown from silk raised by me and reeled in my filature.----*Ed. Cobb's Manual.*

"In preparing the dupions or double cocoons for winding, more are put into the basin at once than of the finest kind. They must be first well cleaned from the floss outside; the water also must be boiling hot, and as the silk they yield is of a coarser quality than the other, and has a good deal of floss upon it, the person who turns the reel must take the opportunity, while the one who manages the basin is preparing the cocoons for winding, to clean and pick off the loose silk from that which is on the reel. These make a coarser thread of fifteen to twenty cocoons; and perhaps as coarse as from forty to fifty cocoons; it is useful for filling in coarser stuffs and likewise for sewing silk.

"The satiny cocoons require water only moderately heated. The proper heat will be found by observing the manner in which the silk comes off from the first of them which are put in a basin, and as already said of cocoons generally, if it come off thick, cold water must be added until the proper temperature be attained. The gum is taken out of the silk by boiling it in soap suds."

MISCELLANEOUS REMARKS.

In the preceding essay, we have spoken only of the dark gray or drab colored worms, which are most common in the United States. There are other varieties worthy of notice.

1. Small silk worms, of three casts or moultings. They are two-fifths less than the common sort, their cocoons are better constructed and composed of finer and more beautiful silk, and require four days less of care. "If I reared silk worms for the purpose of spinning the silk myself," says Dandolo, "I would cultivate only the silk worm of three casts, and those that produce white silk, as preferable to all others; and every year would choose the very finest and whitest cocoons for seed, to prevent the degeneration of the species."

2. There is also in Connecticut, a pale white worm, which eats but twenty days, and produces fine white silk, which does not turn yellow by washing.

3. There is also the large pale white worm, producing white silk, and worms that produce orange colored silk, which are probably varieties of the large drab colored worm. The orange colored are not so valuable as the straw colored or white cocoons.

Several crops in succession may be produced the same year, if the eggs be kept in an ice house till wanted ; or a second or third crop may be obtained from the eggs produced by the first or second. The eggs of the silk worm will bear a greater degree of heat without hatching, the same season they are laid, than is required to hatch them the following spring. By being chilled the preceding winter, they acquire a greater sensibility to heat, and a greater disposition to hatch. When we wish to hatch them the same season they are laid, this process of nature must be imitated. Let the butterflies come out of the cocoons and lay their eggs in a cool place, let the eggs be placed awhile in an ice house or a cold cellar, and then exposed to continued heat, kept up artificially, somewhere between eighty and one hundred degrees of Fahrenheit, in an atmosphere kept moist by steam, until they hatch. Worms for a second crop may be hatched ten or more days before the preceding crop are expected to complete their cocoons, as they will require but little space before the shelves may be cleared for them.

We have said that the leaves on which the worms are fed must be dry, that is, must have no water adhering to them. Wet leaves produce sickness. But in large establishments, during the last age of the worms, a large quantity must be consumed daily, and during long storms it may become necessary to gather the leaves wet, and as necessary to dry them. This may be done by spreading them before a brisk fire, continually turning them with a fork; or by putting twenty or thirty pounds into a dry sheet, folding it into the form of a sack, in which if shaken from one end of the sheet to the other by two persons taking hold of the four corners, they will in a few moments appear quite dry; or by many other means which the ingenuity of the silk culturist may suggest.

The leaves of trees which grow in moist grounds, or shaded from the sun, those from suckers, &c., which are full of sap and

moisture, crude and immature, produce fatal distempers in silk worms. Over feeding or scantiness of food causes disease. A change of the kind of food suddenly made, from the white to the native red, or to the black mulberry, or when this order is reversed, causes disease. Change of nourishment, when necessary, should be gradual. The greatest danger from the change of food is in the last age.

Sudden changes of temperature, either from hot to cold or cold to hot, such as frequently happen in our climate, unless well guarded against produce disease. Silk-worms, like other caterpillars, breathe through little holes in their sides near the belly. Any slimy or oily liquid stops these holes and kills them. Hence also arises the danger of feeding too many on a given space, or of suffering them to become filthy.

In compiling the foregoing, we have selected such rules, remarks and observations as seemed most important in the voluminous writings of others on this subject. In applying them to practice the silk culturist must think for himself, and let reasoning supply the deficiency in these instructions. Our purpose will be well answered if we shall have been able to excite attention to the culture of silk—shall have made those who may be desirous of engaging in it, sufficiently acquainted with the nature, wants and habits of this insect, to enable them to think correctly and act judiciously in this important business. And while the mechanic and manufacturer with an enterprise worthy of much praise are causing the elements themselves to work day and night for their support and aggrandizement, let it not be said that the farmer alone refuses to avail himself of any of those means of improving his condition which a benevolent Deity has placed within his reach. The farmer who, pent up in no workshop, who roams at large over his fields, and views continually the wonderful operations of nature, above, below and around him, must be without excuse if he does not take the most enlightened and enlarged views of the great interests of his country and the world, or fails to devote his powers to the promotion of the greatest good of his species—the first step towards the accomplishment of which is to make himself influential and happy.

MR. PERRY'S EXPERIMENT IN RAISING SILK.

BRADFORD, FEB. 27, 1832.

MOSES NEWELL, ESQ.

Dear Sir,

It appears reasonable that while the Essex County Agricultural Society is offering its patronage to encourage the cultivation of the mulberry tree, and the producing of silk, that it should in return be furnished with the information which experiments may afford those who have been benefitted by its patronage. With this impression, I send you a few observations relative to the raising of Silk, drawn from a small experiment made by me the season past.

Last year I raised several thousand worms of three kinds; one gray and two white.

For the first crop, the eggs were put in rooms, without artificial heat and hatched the last week in May and the first in June.

The gray came	to	maturity in	35 days.
1 of white	"	"	32
2 of white	"	"	28 or 29

Parcels of the eggs of each kind produced by miller, from the worms, were kept in the same room for the purpose of ascertaining whether they would hatch another time the same season without artificial heat, or even greater heat than would be found in any common apartment at that season. In about eight days from the depositing of the egg of the second kind of white, they all hatched in fine order to the amount of some thousand, while the eggs of the other two remained the whole summer in the same situation without being very sensibly affected with the heat, and in fact a part of them remain still in the same place exposed without covering in a room without fire, where I have let them remain to try the effect of cold. How it will terminate with them I cannot say; they appear now to be in a sound and healthful state. The eggs of these last I procured

of a friend in Bristol County; the others from Mr. Boynton of Newbury; to both of whom I am under much obligation for the important and truly practical information very readily given on the subject of feeding the worms. Mr. Boynton has had a second crop of the white worm furnished me.

I raised three crops of worms on the same tables. Five crops might be raised by anticipating the spinning of one by the hatching of another, and keeping them the first ten days on smaller fixtures, as they then need occupy but little space.

My own observation would not justify cutting the leaves into pieces to feed them when young, either upon the principle of economy or for the benefit and safety of the worm. The more tender leaves should be gathered for the young, but they should be given whole. My impression, also, is that it is better to cut off the small limbs and give them to the worms with the leaves on them than to strip the leaves off. The worms feed better this way, eat the leaves more closely, have better opportunity to move and enjoy better air, and are more easily transferred from one table to another when cleaning becomes necessary, while it is necessary to perform this much less frequently when the limbs are used than when the leaves separately are spread out for them. I think also that the tree is much less injured in this way than by stripping it of its leaves. Trimming, even if it be severe and close, seldom injures trees; while exfoliating even if it be in a limited manner is almost always injurious. I may be mistaken, if I am the Directors of your Society are abundantly able to set me right, in the supposition that the putting forth of new limbs with leaves is much less exhausting to trees of any kind, than the putting forth of new leaves from limbs exfoliated in the heat of summer.

I have seen it observed somewhere, that the dried leaves of a former year, prepared by pulverizing and wetting, will answer to feed the young worm when first hatched in the spring. I cannot speak from experience on this subject. I have some leaves in keeping to try this season. I have, however, reason from the following circumstance to think that they will answer that purpose. Many of the ends of the small limbs of my mulberry

trees were killed by the cold of the preceding winter; in cutting the limbs for the worms these dead ends were not taken off;—a very few days had passed before we observed the worms feeding upon the dead bark of these limbs, evidently preferring it for a part of their food to the fresh and green leaves which were given them in abundance. And this propensity was observed during the summer in each successive crop, (and I had four) though as the leaves grew harder and drier as the season advanced, the worms were not seen so frequently in the dry limbs.

From the little experiment I made I am very much convinced of these two things: first, that under favorable circumstances the raising of silk will yield a very good profit. And secondly, that it is a much less intricate and difficult business than a person would be apt to suppose from the account given in most treatises on the subject. Mine were taken care of mostly by my son, a lad of ten years.

For the purpose of extending a knowledge on this subject through the community, the students attending Merrimac Academy this season, under the care of Mr. S. Morse, will have an opportunity of observing the whole process of raising the worms, &c. in a room near the academy building, which will be open to them from day to day. And every circumstance, as far as understood, freely and fully explained to them by the person who has the care of the establishment.

My mulberry trees continue in a very thriving condition, and afford the most abundant evidence of the advantage obtained by pruning and fashioning the roots as well as tops when they were transplanted.

With my best wishes for the prosperity of the Society in its highly commendable efforts, I am, sir, with much personal respect, yours, GARDNER B. PERRY.

TABLE OF THE REARING OF SILK-WORMS TO THE SIXTH AGE, FROM ONE OUNCE OF EGGS.

AGES.		Space occupied by the worms on the feeding frames or hurdles.	Temperature Fahrenheit's Scale.	Quantity of leaves.		Total of leaves for each age.		OBSERVATIONS.
		feet, in.		lb.	oz.	lb.	oz.	
First age	1st day	10	75°	1		7	12	Tender young leaves, chopped fine; four meals, progressively increased.
	2d "			1	8			" " " the first the largest, the last the smallest.
	3d "			3	4			" " " four meals.
	4th "			1	8			The first meal of 10 oz. the others less, if the leaves have not been eaten.
	5th "				8			Tender leaves, chopped fine. Worms casting their first skin.
Second age	1st day	21	73° to 75°	5		23	4	Half tender branches and half leaves, cut fine; the first meal 14 oz. the other leaves in 2 meals.
	2d "			7	8			Tender leaves, four meals; the two first less than the two last. Enlarge the spaces.
	3d "			8	6			" " the two first the largest.
	4th "			2	6			" " distributed as wanted. Worms casting their second skins.
Third age	1st day	52	71° to 73°	7		76	9	Half tender branches, half leaves a little chopped; second meal two pounds.
	2d "			24				Chopped leaves, four meals; the two first less than the two last. Enlarge the spaces.
	3d "			25				" " the two first the largest.
	4th "			14				" " " " the last, least
	5th "			6	9			" " distributed as required. Third casting of their skins.
	6th "			"	"			" " " " Worms are roused.
Fourth age	1st day	124	68° to 71°	25		229	8	10 lbs of branches, 15 lbs. of leaves, cut coarsely; give the branches first.
	2d "			42				Leaves coarsely cut, four meals; the two first the smallest. Enlarge the spaces.
	3d "			57				" " three meals; the first the least, the last 18 lbs.
	4th "			65				Whole leaves, four meals; the three first 18 lbs. each.
	5th "			32				Picked leaves distributed as wanted; the first meal the largest.
	6th "			8	8			" " " Worms prepare to cast their skins.
	7th "			"	"			Leaves as wanted, Worms are roused.
Fifth age	1st day	272	68° to 69°	46		1400		Half branches, and half leaves. Enlarge the spaces.
	2d "			70				Picked leaves, four meals; the first the smallest, 10 lbs.
	3d "			100				" the first meal 24 lbs.
	4th "			142				" four meals, the first meal 28 lbs.
	5th "			200				" " the first meal 40 lbs.
	6th "			240				" " the last the largest.
	7th "			234				" " the first the largest, the rest to lessen gradually.
	8th "			165				" four or five meals, the first the largest.
	9th "			132				" distributed as wanted. Worms approach maturity.
	10th "			71				Continue to feed, as long as they will eat.

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EXPLANATION OF THE PLATE.

1. The egg, or the development and birth of the silk worm.
2. Silk worms during the first age—5 days.
3. Silk worms in the second age—4 days.
4. Silk worms in the third age—6 days.
5. Silk worms in the fourth age—7 days.
6. Silk worms in the fifth age—11 days.
7. A species of silk worm of dark grey color.
8. The Cocoons.
9. Two open cocoons, with their grubs—the upper one containing only the shell of a developed chrysalis—the lower, the mature chrysalis.
10. A cocoon from which the butterfly is near emerging.
11. A cocoon from which the butterfly has escaped.
12. Butterflies coupling.
13. Female butterfly, laying eggs.

The branch of the mulberry tree, represented in the plate, should not be overlooked. The leaf is less indented, rounder, and larger than others less valuable. From trees with leaves like this, scions for grafting should be taken.

DR. ESSEX AGRICULTURAL SOCIETY IN ACCOUNT WITH ANDREW NICHOLS, TREASURER, CR.

1830. Jan. 17.	To am't of payment of premiums, printer's bills, &c. &c. since the last account stated, viz. Jan 4, 1831	$605 00		Jan. 4.	By balance of account stated	$325 85
	To amount of money loaned on int.	300 00	1832. Jan. 17.		By interest and Bank dividends rec'd	228 52
	To balance	823 62		"	By cash of new members	262 00
				"	By repayment of money loaned	288 00
				"	By cash refunded by J. Kittredge	24 25
				"	By State's Bounty for the year 1831	600 00
		$1728 62				$1728 62

STATE OF THE SOCIETY'S FUNDS.

In the Savings Bank, Salem, with the interest accrued since October, 1829	$489 20
Thirty-nine shares in Banks in Salem, estimated at their par value	3[illegible]70 00
Individualnotes with satisfactory security	24 00
Individual obligations to be accountable for fees of new members	[illegible]9 00
Cash in the treasury	824 62
	$5465 82

Errors excepted.

Danvers, January 17, 1832.

ANDREW NICHOLS, TREASURER.

ESTIMATE OF THE SOCIETY'S EXPENSES, &c. FOR THE YEAR 1831.

Amount of premiums and gratuities awarded	$ 395 [illegible]0
Amount of bills for printing pamphlet and other publications	110 5[illegible]
Expenses paid incident to the Exhibition at Andover	15 77
Expenses paid by the Committee on Farms	9 00
Stationary, postage, and other incidental payments, (estimated at)	10 00
Compensation voted the Secretary, by the Board of Trustees	50 00
Amounting to	$ 590 27

Attest, JOHN W. PROCTOR, SECRETARY.

PREMIUMS

OFFERED BY THE ESSEX AGRICULTURAL SOCIETY IN 1832.

—

I. MANAGEMENT OF FARMS.

For improvements and skill in husbandry, taking into view the entire farm and its appendages—

The best,	thirty dollars;
The second,	twenty-seven dollars;
The third,	twenty-four dollars;
The fourth,	twenty-one dollars;
The fifth,	eighteen dollars;
The sixth,	fifteen dollars.

REMARKS.

At the meeting of the Trustees in January, 1832,—in consequence of the number of applications for the premiums on farms having been so few; and the plan heretofore pursued of offering these premiums having failed, in some degree, to bring forward to the notice of the Committee, those farms in the county, from the examination of which the most useful information is likely to be derived for the benefit of the Society,—it was voted, in substance—

"That the premiums for Farms be as at present arranged, and that in addition, it be recommended to the Trustees and the members of the Society generally to suggest to the Committee on Farms, such farms as they within their neighborhood may deem particularly deserving the attention of the Society, in which case it shall be the duty of the Secretary of the Society

to notify such individual of the desire of the Committee to inspect his farm, and to receive a particular account of his husbandry; in which case, with the owner's consent, it shall be the duty of said committee to visit such farms and to present the details to the Society, in their reports, if they shall deem them useful and instructive.

"That in cases where such individuals may not be willing to become competitors for the premiums, the Committee may be at liberty to bestow such a gratuity for any distinguished improvement or extraordinary good management, as they may think proper—but in no case shall such gratuity exceed the amount of the highest premium offered."

It will be expected of the claimants of these premiums, that they will furnish to the Committee a statement in writing, as minute and particular as may be practicable, of the entire *condition*, *management* and *produce* of their farms.

These statements must be forwarded to the Secretary, on or before the last day of November the present year.

Claims for the premiums must be entered with the Secretary by the first of June.

The Committee to examine Farms in 1832, are

James H. Duncan,	of Haverhill;
Daniel Putnam,	of Danvers;
John W. Proctor,	of Danvers;
Thomas Payson,	of Rowley;
Richard Heath,	of Haverhill;
William Johnson, Jr.,	of Andover;
Moses Wildes,	of Topsfield.

II. DAIRY.

1. For the best produce of butter on any farm within the County, in proportion to the number of cows producing it, from the 1st of June to the 9th of July inclusive, in the present year; a sample of which, not less than fifty pounds, to be exhibited, twelve dollars.

For the second best, - - ten dollars.

2. For the best produce of butter, on any farm within the County, from not less than four cows, in the six months next following the 20th of May the present year—a sample of not less than fifty pounds of this butter to be exhibited at the anniversary of the Society, *quality* as well as *quantity* to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, - - - - twenty dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the County, in the months of *June*, *July*, *August* and *September*, in the present year; a sample of which, not less than one hundred pounds to be exhibited, - - ten dollars.

For the second best, - - - eight dollars.

NOTE. It is expected of the claimants of these premiums, that they will furnish the Committee with a minute and accurate statement in writing of the entire management and produce of their dairy. The more particular such statements are made, the more satisfactory they will be to the Committee. As the object of offering these premiums is, principally to learn how to improve the process of making and preserving these articles.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as a manure, on not less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.

For the second best, - - - ten dollars.

IV. FOREST TREES.

The premiums heretofore offered to encourage the cultivation of Forest Trees, are ordered by the Trustees to be continued for four years next ensuing, to wit:

For the best plantation of *White Oak Trees*, raised from

the seed, not less than one acre, nor less than one thousand trees, in the third year's growth - - thirty dollars.
For the second best do. - - twenty dollars.
For the third best do. - - - ten dollars.
For the best plantation of *Locust Trees*, with the same conditions, - - - - - - - twenty dollars.
For the second best do. - - fifteen dollars.
For the third best do. - - - ten dollars.
For the best plantation of *Larch Trees*, with the same conditions, - - - - - - - twenty dollars.
For the second best do. - - - fifteen dollars.
For the third best do. - - - ten dollars.
For the best plantation of *White Ash Trees*, with the same conditions, - - - - - - - twenty dollars.
For the second best do. - - - fifteen dollars.
For the third best do. - - - - ten dollars.
For the best plantation of *Chestnut Trees*, with the same conditions, - - - - - - - twenty dollars.
For the second best do. - - - fifteen dollars.
For the third best do. - - - ten dollars.

☞ Claims for these premiums may be entered with the Secretary of the Society. The plantations will be examined by Ebenezer Moseley of Newburyport, Andrew Nichols of Danvers, David Cummins of Salem, Benjamin Osgood of Methuen, and John Choate of Ipswich, a special committee for this purpose, in the third year after they are planted. A statement in writing of the entire process of cultivation will be required from the claimant.

V. CULTIVATION OF WHITE MULBERRY TREES FOR THE MAKING OF SILK.

For the best plantation of white mulberry trees, not less than half an acre, - - - - - - twenty-five dollars.
For the second best - - - twenty dollars.

For the best nursery of white mulberry trees, not exceeding two years growth, - - - twenty dollars.

For the second best, - - fifteen dollars.

For the best production of silk exhibited either in the cocoons or manufactured, together with an accurate statement of the whole management of the worms and amount of labor employed, produced by the enterprise of one family, fifteen dollars.

For the second best, - - - ten dollars.

☞ These premiums are offered, to be awarded in 1832, if meritorious claims shall be presented;—and they will probably be continued for the years 1833 and 1834, together with such others as the progress made in the cultivation of Silk in the County may warrant.

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, (that is turning water from its natural current so as from time to time to overflow the land) with a detailed account of the manner, expense, and benefits produced, - - twenty dollars.

N. B. Claims for this premium must be entered with the Secretary, so that the Committee for viewing Farms may have an opportunity of examining the crops while growing. If not awarded the present year, it will be continued for the next, and so on for four years, in the hope of producing some valuable experiments on this subject.

VII. PLOUGHING.

1. Double teams—

For the best performance in ploughing, twelve dollars.

For the second, - - - ten dollars.

For the third, - - - eight dollars.

For the fourth, - - - six dollars.

2. Single teams—

For the best performance in ploughing, - ten dollars.
For the second, - - - eight dollars.
For the third, - - - six dollars.
For the fourth, - - - four dollars.

☞ Double teams will be required to plough not less than *seven* inches deep;—single teams not less than *five* inches deep;—and each about one quarter of an acre of land. The work is to be done without hurrying or worrying the cattle;—but in such a manner as the teams might continue their labor for three hours, without extraordinary fatigue. The best work, with least expense of labor, will be the test of merit. Particular regard will be had to the construction of the ploughs used,—as the main object in offering these premiums, is, to introduce to common use, ploughs of the best construction.

VIII. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the persons who shall exhibit at the Show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward—a premium shall be given not exceeding ten dollars.

☞ In all cases proof must be given of the work done by the implement before it is exhibited; and of its having been used and approved by some practical farmer.

IX. COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of Cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used and

the expense of raising the same ; the experiment to be made in the three winter months, - - twenty dollars.
For the second best, - - - fifteen dollars.
For the third best, - - ten dollars.

☞ These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for four years.

X. CIDER.

For the best barrel of cider that shall be produced at the Exhibition in 1833, made within the County, a premium of - - - - - fifteen dollars.
For the second best - - - ten dollars.

REMARKS.

These liberal premiums are offered for cider, with the hope of obtaining some valuable information, as to the process of *making* and *preserving* this article. Consequently it will be expected of the claimants that they will furnish a detailed statement of their entire management, from the time of gathering the fruit until the exhibition of the cider. Such a course of management, as could be imitated by our farmers generally, would have the preference. In these temperate times, when almost all honest men admit that the use of *ardent spirit* is unnecessary and injurious, when it is clearly proved that the best managed farms are those where the least *ardent spirit* is used, it is expected that no *ardent spirit* will be used in this process.

XI. POTATOES.

1. For the best conducted experiment in the raising of potatoes, on not less than half an acre of land, having regard to quantity and quality ; a detailed statement of which is to be furnished the Committee in writing, - seven dollars.
For the second best do. do. - - five dollars.

2. For the best conducted experiment in the raising of potatoes, from the seed of the apples or green balls—samples of not less than four quarts from each seed of the second year's growth, and the produce of not less than six seeds, to be produced at the Society's Exhibition in 1832, seven dollars.

For the second do. do. - - five dollars.

☞ For some interesting instructions on this subject, see the pamphlets heretofore published by the Society; and several communications in the New England Farmer, a valuable work, that should be in the possession of every farmer.

XII. IMPROVEMENT OF MEADOW LANDS.

For the best conducted experiment in improving, by draining, gravelling or otherwise, not less than three acres of wet meadow or swamp land, with a detailed account of the entire process and benefits, - - - - twenty dollars.

For the second best, - - ten dollars.

Note. Persons claiming these premiums must give notice to the Secretary, so that the Committee may view the crops while growing.

XIII. CULTIVATION OF WHEAT AND RYE.

For the best conducted experiment in the raising of wheat, on not less than one acre of land, - - ten dollars.

For the best conducted experiment in the raising of rye, on not less than one acre of land, - - ten dollars.

☞ A statement of the produce—the manner of preparing the ground—the kind of seed used—the manner of preparing the same, &c. &c., including all the details in relation to the crop, will be required to be handed to the Committee.

XIV. ANIMALS TO BE PRODUCED AT THE EXHIBITION IN NEWBURY, ON THURSDAY, SEPTEMBER 27, A. D. 1832.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the County, at least twenty-two months from the day of exhibition, fifteen dollars.

For the second best do. do. do. - ten dollars.

For the third best do. do. do. - - five dollars.

☞ As the object in offering these premiums is to promote improvement in our breed of stock, the Trustees have thought it proper to direct, that persons who may receive the premiums shall sign an obligation to be left with the Secretary, that they will observe the conditions on which the premiums are offered, or forfeit the same, for the benefit of the Society.

For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence, as to the quantity and quality of her milk, and the manner in which she has been fed, - - - - fifteen dollars.

For the second best do. do. do. - ten dollars.

For the third best do. do. do. - five dollars.

For the best heifer, that has been in milk three months or more, with satisfactory evidence of the quantity and good quality of her milk, - - - ten dollars.

For the second best do. do. do. - five dollars.

For the best pair of three year old steers, ten dollars.

For the second best do. - - five dollars.

For the best pair of two year old steers, five dollars.

The Trustees have thought proper to renew their premiums upon swine, and offer the following the present year:

For the best boar, - - five dollars.

For the second best, - - - three dollars.

For the best breeding sow, - five dollars.

For the second best, - - three dollars.

For the best litter of weaned pigs, not less than four, from two to six months old - - - six dollars.
For the second best, - - three dollars.

☞ The person receiving a premium for a breeding sow, will be required to obligate himself to keep the animal for this purpose, at least one year from the time of Exhibition.

No animals will be entitled to receive more than one premium. Animals that have received one premium from the Society, will not be entitled to another, unless it be of a higher order.

Should any animals of fine quality, be presented at the public show, for exhibition, they shall receive such notice from the Trustees, as by their merits they are entitled to. And should they be of extraordinary quality, such gratuities will be tendered, as may reward their owners for exhibiting them.

XV. HORSES.

For the best horse raised in the County, not less than *three* nor more than *five* years old, - - twenty dollars.
For the second best, - - fifteen dollars.
For the third best, - - - ten dollars.

XVI. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, - - five dollars,
For the second best do. do. - three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, - - - three dollars.
For the best straw or grass bonnet, - five dollars.
For the second best do. - - three dollars.
For the best wrought hearth rug, having regard both to the quality of the work, and the expense of the material, three dollars.
For the second best do. - - two dollars,

For the best piece of woollen cloth 7-8ths of a yard wide, and twenty yards in quantity, - - five dollars.
For the second best do. - - three dollars.
For the best piece of flannel, a yard wide, and twenty yards in quantity, - - - - - four dollars.
For the second best do. do. - two dollars.
For the best wrought woollen hose, not less than four pair, - - - - - two dollars.
For the second best do. - - one dollar.
For the best men's half hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth, not less than twenty yards, four dollars.
For the second best do. - - two dollars.
For the best piece of linen diaper, not less than twenty yards, - - - - three dollars,
For the second best do. - - two dollars.
For the best wrought counterpane, having regard to the quality and expense of the materials, - four dollars.
For the second best do. - - two dollars.
For the best specimen of wrought lace, three dollars.
For the second best, - - two dollars.
For the best specimen of work, performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.
For the second best do. - - two dollars.
And should any other articles of domestic manufacture, be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

GENERAL REMARKS.

All claims for premiums, to be awarded on the day of Exhibition, must be entered with the Secretary of the Society on or before 9 o'clock, A. M. of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

Claims for premiums on farms must be entered with the Secretary on or before the first day of June the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year*, will be considered as generously given to increase the funds of the Society.

And all premiums heretofore awarded, the payment of which is not demanded of the Treasurer previous to the next Exhibition, will be applied in the same manner.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

All persons intending to be competitors in the ploughing match, must give information thereof to the Secretary, or to Daniel Adams, 3d of Newbury, on or before the Monday preceding the day of Exhibition.

No person will be entitled to receive a premium, unless he complies with the condition on which the premiums are offered; and gives *notice as required* of his intention to claim the same.

In regard to all the subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality*.

By order of the Board of Trustees.

E. MOSELEY,
H. CLARK,
A. NICHOLS,
J. H. DUNCAN,
J. W. PROCTOR. } *Committee.*

January 17, 1832.

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NOTE.

There have been obtained in the course of the last year, by the exertions of several individuals, about one hundred new subscribers as members of the Society. Their names would have been published in this pamphlet, had it not already extended far beyond the dimensions contemplated.

Gentlemen, in the several towns of the County, interested in the Society, are requested to furnish the Secretary with correct lists of the names of members in their respective towns, designating those *deceased*, and those *removed* from the County ;—and when these are obtained, an entire catalogue of the members, together with the Constitution of the Society, will be published.

ERRATA.

Page 84. 7th line from bottom, strike out the word "although,"

88. 22d line, for "9," read "90."

108. 2d line, for "1830," read "1832."

110. For "Richard Heath, of Haverhill," read "of W. Newbury."

TRANSACTIONS

OF

THE ESSEX

AGRICULTURAL SOCIETY,

FOR

1832.

VOL. II.—No. II.

Published by order of the Society.

MARCH, 1833.

SALEM GAZETTE PRESS.

Foote & Chisholm.

AN

ADDRESS

TO THE

ESSEX COUNTY

AGRICULTURAL SOCIETY,

DELIVERED

AT NEWBURY, SEPTEMBER 27, 1832,

AT

Their Annual Cattle Show.

BY GARDNER B. PERRY.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM, MASS.
FOOTE & CHISHOLM—GAZETTE AND MERCURY OFFICE,
1833.

ADDRESS.

The value of an Institution must be estimated by the interest it is designed to promote and its adaptation to promote such interest. Brought to this test, few, whose more direct bearings are on worldly concerns, have a higher claim to general support than the one I now have the privilege to address.

Your object, gentlemen, is to enable men more abundantly and with diminished labor to supply themselves with the necessities and elegances of life and in this way to render their condition more comfortable.

Surely this is a great and worthy enterprise. A man may live and *endure* life, and, if called in providence, be submissive too, in caves or holes of the rocks, or ill-sheltered in the wigwam of the untaught savage, on a morsel of bread, the scanty earnings of ill-directed labour. Still it is an object of deep interest to be better provided for and to obtain this better provision with diminished labor.

As the object of this Society is important, so I think it may easily be shown that it is well calculated to produce the result for which it is organized.

To accomplish this result, it is indispensable in the first place that the community generally be made acquainted with the abundant and varied provision which a bountiful Providence has made for us. Such knowledge is indispensable to a judicious selection of the most profitable or useful. On this subject there is a want of information, not generally supposed, and not easily accounted for. In the animal, vegetable and mineral kingdoms, there are varieties recommended by the profit or pleasure they are capable of affording, abounding in different parts of the world,—I might say of the state and county,—of which large communities remain unacquainted. In consequence of which, an article of comparatively

small value is cultivated, when a much better might be procured with the same expense of labor or money.

The same is true in respect to many implements of husbandry, and even tools of the mechanic. Few employments make a greater demand upon the physical powers than farming. The call for the improvements of skill, are therefore as urgent here as they ever will be in any employment. In no business, however, has the head done so little and left the hands so much to perform. The head has not however been slower in invention, than has been the progress of knowledge of what has been devised, or the disposition to adopt the improvements which have been made. In various districts at no great remove, implements of husbandry possessing distinct advantages above those in common use are possessed, the employment of which, if not the knowledge of their existence, is confined to very limited circles. This is particularly true in communities composed of emigrants from different nations in a foreign country. The English, Scotch, Irish, Dutch, Swedish and German settlers, are hardly better distinguished by their language than by the form and nature of their implements of husbandry. Among each of these communities may be found some implements of peculiar excellence, and others partaking of very obvious defects. Yet the ill-contrived of one very tardily give place to the more perfect of the other. Prejudice may be among the causes. Ignorance that better are in use is however the most general.

The design of this society is to collect and diffuse knowledge on these important and interesting subjects. How well calculated it is to do this, must be obvious to the most careless observer. By its public meetings it draws men together from different places, by its premiums it induces them to bring what they suppose of peculiar excellence, it invites them to give a history of their successful and unsuccessful efforts. In its *exhibitions* what is deemed excellent by one is placed by the side of what is thought excellent by another. Opportunity of inquiry, comparison, and trial are afforded, and thus all may select for their own use what in their estimation possesses the fairest claims to preferment.

By the doings of this society the public are furnished with the knowledge of facts connected with experimental farming. In the introduction of new or foreign articles of produce, and trials of new modes of culture and manufacture, there must be more or less risk. Till trial has been made, no one can know with certainty what effect change of climate, soil, and other surrounding circumstances may produce. This risk a large portion of the community are not able to take upon themselves to any considerable extent. For should the labor of the year be expended upon an unsuccessful experiment, they would in the end be pressed for the necessaries of life. With the public spirit and praiseworthy enterprise of the wealthy and scientific farmers of the county, there is hardly a call for them to make experiments. These are made for them, and with such precision in the operation, and accuracy of record, that any one may judge with all necessary certainty whether he can with advantage adopt them or not. In this respect the people of this county are peculiarly favored, for there are spread over the county, farms, embracing a great variety of soil, owned and improved by wealthy, enterprising and scientific men, who cultivate them as a means of rational enjoyment, conducive alike to health of body, vigor of mind, and refinement in moral feeling. Of this class of farms, may be named those of

Gorham Parsons, at Byfield.
William Bartlett, at Methuen.
Frederick Howes, at Beverly.
James H. Duncan, at Haverhill.
E. H. Derby, and the Pickman farm, } at Salem.

And many others of similar character.

These farms may all be regarded as experimental farms, or, I might say, agricultural laboratories, owned and managed to be sure by individuals, but from the manner in which they are conducted scarcely less advantageous to the community than if they were public institutions ; for the whole operations upon them are open constantly to public inspection, where every one of sober conduct may see for himself and learn, without money and without labor,

what change he may make with great certainty of advantage, in his articles of produce, or method of cultivating them.

Of the same character are the agricultural researches and improvements of many professional men, who though extensively engaged in their appropriate spheres, still give a portion of their time to their farms as a means of healthful relaxation, and in some instances perhaps with a commendable regard to the profit connected.

For examples of which I might refer to

Dr. N. Cleaveland, of Topsfield,

Dr. D. Robinson, of West Newbury,

Rev. B. Loring, of Andover, and

Rev. H. Colman, lately an active and efficient member of your Board of Trustees, who has now gone to another section of the state, bearing with him the respect and good wishes of all; and who has communicated for your instruction many valuable experiments in husbandry.

As holding a like place in the scale of public utility, and alike entitled to public gratitude, are the gratuitous efforts of various distinguished individuals, who though not engaged in practical agriculture, are in various ways bringing before the public the knowledge which former experience and observation, together with the investigation of science, have taught them. And also the encouragement and interest which their well earned reputation and standing in society give to the Institution with which they are so usefully connected. Among those of this class I with pleasure refer to the worthy President, and the like worthy and active Secretary of the Society, and to Dr. Nichols, whose communication on the subject of Silk, gave so much value to the able report published by the Society the last year.

I will close these specifications, though other cases might with propriety and advantage be referred to, by mentioning the farms of wealthy, enterprising and high minded yeomanry, who themselves "*either hold or drive.*" These are in the field themselves, where they try over again and with a direct regard to the advantage to be gained by the adoption of them in general practice, the experiments which others may have made for scien-

tific purposes, and by their own personal labor and observation are able to decide with certainty what advantages may be expected from new modes of culture, new implements in husbandry, and new articles of produce.

As fair illustrations of this remark, I refer to

Moses Newell, of West Newbury.
Putnam Perley, of Newbury.
Jacob Osgood, of Andover.
Stephen Barker, of Andover.
Richard Stewart, of Haverhill.
Jesse Putnam, of Danvers.
Daniel Putnam, of Danvers.
Erastus Ware, of Salem.

The experiments made by such men, with the manner of operations and the success attending them, through the medium of your Society are spread before the community. Thus enabling those who cannot venture upon experiment themselves, to ascertain whether they can with safety and advantage introduce any change in their agricultural operations, and if they adopt new methods, to go on with them with almost the same readiness as though they had been trained to them from early life.

In these illustrations of what I wished to state I have purposely referred to persons living in various parts of the county. Many others might with equal, and perhaps in some instances with greater propriety, have been mentioned. I hope those whom I have referred to will excuse the liberty I take to introduce their names in this connexion.

In addition to these advantages, the doings of this Society have a tendency to remove some of the greatest hindrances which lie in the way of agricultural improvement.

You will permit me to mention some of these.

The first to which I will refer is *an unsettled state of mind.* This may be more common and operative with other classes than with agriculturalists; but it prevails to a most hurtful degree with them. The feelings of many are so unsettled that they may truly be said to be ever on the wing, though during life they never in reality move out of their place. This state of

mind is destructive of all enjoyment, for it produces a disrelish for what they now possess, and keeps them from all efficient effort to make a better provision for the future. Those under its paralizing influence will neither erect their buildings, place their fences, plant their orchards, cultivate their farms, embellish their gardens, or manage any of their principal business, as they would were it not for an undefined *peradventure* that at some time they shall find it for their advantage to sell, and in such case be constrained to sacrifice much of the expense they had been at for improvement. All is done just to answer present exigences, and in the end, as might be expected, the man has neither the profit or comfort which he might easily have secured, had he, as he ought, never allowed himself in this unsettled state of mind, nor made arrangements to sell till he had determined to do it, nor thought of moving till the openings of providence made it his duty so to do. After intemperance, and the expensive demands of fashion, there is no one cause which in my apprehension casts such a withering influence over the prosperity of society, as this feeling. All classes in the community are injured by its unhealthful influence. It extends to those who do not give it a resting place in their own bosoms. Parents who have no intention to change their own residence, are less anxious to improve their possessions because of the uncertainty whether their children will retain the inheritance and occupy the farms which are handed down to them. Children, when laboring with their parents, plan with less comprehension, and work with less courage, for in their hearts at least, they say ' of what advantage will our exertions to improve the place be, should father sell, as we often hear him intimate that it is probable he may.' It discourages noble effort, enterprise and improvement.

I could direct you to houses which have already ceased to shelter those who still live in them—and to farms with some of the best land untouched, or with fields which once yielded in rich abundance the glories of the year, now grown over with weeds, and with fences broken down—the legitimate consequence of a wandering, unsettled mind. And though some of the proprietors of these may be leaning on their staves for very age, they are just

as much unsettled as they were a half century since. I am perfectly aware that this feeling has in a degree diminished in this county, and I hope throughout New England within a few years past. But it still continues with a dreadfully withering operation among us. The causes which induced this state of mind are numerous, and it would not be useless or uninteresting to dwell upon some of them. I shall confine myself to a single one, not perhaps the most prominent, but connected directly with the object which I have before me, and operating, though not exclusively, upon the yeomanry of the county. The cause to which I allude rises up in connexion with a fact which I suppose all must allow: that farming has been pursued too much as a mere mechanical operation, while the reasons of each operation have not been sufficiently understood, nor have those engaged in it been sufficiently inquisitive whether other and better ways might not be adopted. The mind being left unoccupied becomes restless, dissatisfied and hungry, consults new things, goes abroad for its enjoyments, and the whole man set afloat, ready, in fact willing, to be driven about by every trifling circumstance.

I know nothing which promises more effectually to remove this evil than to diffuse through society more agricultural science, enterprise and taste, to direct the mind to the reason upon which the operations of farming are founded, to induce men to commence plans of distant yet of certain ultimate advantage, to excite to inquiry and investigation, and thus turn farming into a business of the head as well as of the hands;—to induce men also to unite in their plans, what is beautiful and attracting with what is useful, and thus make their farms, houses and other appendages pleasant and attracting to the owners;—and further, by prevailing with them to take a part in the public efforts which are going on for the general advantage, to accustom them to feel that their interest and comfort are nearly connected with those among whom they dwell, and that it cannot be of little concern whether they continue with them, or for a small or imaginary good break away from all the associations which time and the interchange of kindness and acquaintance have made dear to them. How well suited the plans of your Society are to bring about this desirable

change need not be described, nor would it be easy to estimate the advantages which would arise from it could it produce that feeling of filial respect and piety exhibited in the following quotation. "The Lord forbid it me that I should give the inheritance of my fathers to them." This sentiment may be allowed to operate too powerfully.

Another hindrance in the way of agricultural improvement is an impression entertained by many that farming is not so genteel and honorable as some other employment. How this feeling grew up, (a feeling in the extent to which it exists among us almost peculiar to New England,) I shall not attempt to decide: sure I am of its existence and of its baleful influence, though like the one just before mentioned operating with somewhat diminished force. It has dried up the spirit and held the mind of many a noble and virtuous youth in bondage, suffused many an innocent cheek with a blush, prevented many ingenious and stirring spirits from going into that employment, whose taste and interest would otherwise lead them to it, and induced those who were engaged in it to work with less vigor, to seek for improvement with less interest, and frequently to turn all their originating and inventive powers into other channels, even when farming was still their real occupation.

Who can look for a moment to the nature and operations of this Society and the men who compose it, and not perceive how powerfully its influence must tend to remove an impresson so unfounded in principle, so hurtful in its tendency. The example of the rich, the learned and distinguished men who give life and interest to this Society, comes in upon the soul of many a laboring youth like a refreshing and gladdening shower upon the thirsty land and withering herb.

The story that PICKERING, the founder, and for many years the worthy and efficient President of this Society, held the plough, handled the spade, and looked well to the stall, has a thousand times been told, and whenever told has poured fresh courage and joy into the mind of many a toiling youth, who humbled under the impression of which I am speaking, was tempted to blame his fate which in his apprehension had cruelly chained him to a farmer's life.

Another obstacle in the way of agricultural improvement, is a too general impression entertained that learning is of little advantage in the business of a farmer's life. Were it not for observations on other subjects which I wish for special reasons to make, I should like to dwell a little time on this point. As it is, I must content myself by observing, that in my apprehension there is no other employment in which there is a constant demand for manual labor, where there is so loud a call for the aids of science, or where the suggestions of a well-instructed mind would prove a more efficient help. For proof of the correctness of this opinion, I have no occasion to go beyond the limits of this county, or out of the catalogue of the members of this Society. Were I to train a child for the labors of the field, my first care would be to make him familiar not perhaps with either ancient or modern languages, though if possessed of common sense they would do him no hurt, yet with the physical sciences; in all which I would have him as carefully instructed as if he were to go into professional life. Knowledge is power, power in the field as well as in the senate-house, power over matter as well as over mind.

A further hindrance to improvement in husbandry is found in the fact, that whatever exertions a man may make to keep his own fields free from insects, noxious plants and whatever is destructive to vegetation, it can be only of partial and temporary advantage, because in the neglected lands of his neighbor a new and unfailing recruit will be reared up every returning season. The field of the slothful will be grown over with thorns and the face of it covered with nettles. It would be well were there no sluggards in the land, and it would be happy if many who are not sluggards were sufficiently apprised of the advantages which would accrue to themselves and neighbors, did they suffer no noxious weed or devouring insect to find shelter about them. He who suffers his own fields to be filled with hurtful vegetation, or his trees to be devoured by destructive insects, does nothing for which the laws of the land can punish him, nothing for which he would be willing to have his neighbor complain,

and yet he is instrumental of doing as great an injury, as if when his trees were filled with fruit or his fields white for harvest, he should by stealth or force appropriate a part to his own use, or knowingly permit his cattle to devour it. He who prevents my trees from bearing, leaves me as destitute as he who sequesters the ripened crop to himself. There is a moral obligation on this subject which I fear is not felt, responsibilities which are not regarded, injuries permitted for which no compensation is provided, discouragement induced by which the whole community suffers.

Somewhat of the same character is a wanton and shameless liberty which many persons take in respect to others' enclosures. I feel happy in bearing testimony to the general good morals of the people in this county, to their general correct views on the subject of property, and to the ease and safety which all feel in their persons and their possessions. Still, all things are not as they should be. The subject to which I have reverted is one in which the sentiments and habits of many of our citizens need reform. Our fields, our orchards, and our gardens are not safe from the intrusion of those who may think it a little nearer to make their way through them than to follow the road which the public have provided. Fields in every state of cultivation, ploughed, planted, sowed, and levelled, green with the tenderness of spring or crowned with the flowing harvest, are passed in every direction by young and old, male and female, learned and unwise. No one intends an injury, and the injury done by an individual is small, yet the amount of the whole is considerable. This licentiousness extends beyond mere travel. No one thinks of stealing, yet the trees of early and choice fruit are spoiled by little and little by those who wish just to know how it tastes, and the owner is often the only person in all the neighborhood who has not had his part. Melons are taken from the vines, and portions of almost all pleasant things are sequestered, by those who have a taste to gratify, but not energy enough to produce for themselves, nor spirit enough to pay for their own gratifications, nor even civility enough to ask (which in the large proportion of instances would be all that is required) for what they so in-

tensely desire. I once knew a field owned by a person who possessed some taste for improvement, and who had been at some expense to introduce into it specimens of better fruits and choice vegetables, in relation to which I have heard the neighbors say that the injury sustained by the licentiousness of which I am now speaking, could not be less that eight or ten dollars a year for a dozen years in succession. This makes a considerable sum and was a serious loss to the individual, whose means were small; great as it was, the perplexity, vexation and frequent disappointment in experiments upon certain articles, were still greater. The discouragement which is thus spread through the community is more serious still. From the loss and perplexity produced in this way, many persons (I think very erroneously) have been induced to cut down trees which they had cultivated with much pains and expense, and many more have been prevented from any attempt to raise them, from the little prospect that they would be permitted to enjoy the produce when brought to maturity.

It is certainly desirable that these evils and discouragements should be removed. And I think as your plans for improvement advance, the sentiments and habits of the community on this subject will improve. But I apprehend you should not remain satisfied with the slow reform which would thus be produced. The evil as it now exists is one of the greatest and most extensive hindrances with which the Society has to contend. I must suppose it both their duty and interest, to put forth a direct and powerful effort to stop this injurious and troublesome practice. The attention of the community, I think, should be called to the subject, by an able and special appeal, addressed to their understanding, their moral feelings, and their interest; and where the dictates of reason, a sense of justice, and the generous feelings, prove ineffectual, the restraint of law should be called in. And I know of no body of men, considering their high standing in the respect and confidence of the community, their situation scattered through the county, and the object of their association, by whom such an appeal could with greater propriety be made, and if made, promise better success, than by those of this association;

and I firmly believe that the success of this institution and the moral state of the county in the coming generations, depends much on the fact whether this effort be made, or things be suffered to go on in their present course.

You will permit me here to pass from a consideration of hindrances which present themselves to retard agricultural improvements, hindrances which will however certainly give way before your enlightened and well-directed efforts, to the notice of some increased if not new efforts which appear to me connected with a wider and more speedy accomplishment of the commendable designs of your institution. In this connexion I will suggest that a more general circulation of the Annual Reports and other publications of your Society is needed. Since called upon to give this address, I have looked over most of the printed documents of this Society anew,—I had read many of them before,—the result of which has been a deeper conviction of the wisdom and spirit with which its operations have been conducted. Information on subjects of general importance is there given in an intelligible manner. Information, too, which I know from my own experience, it would be for the general interest were it more commonly possessed and regarded. It may be asked what more can be done than to collect, embody and send abroad the information contained in these publications. You will permit me to observe that your reports, (and the observation might with the same propriety be extended to almost all useful institutions,) are not made common enough. Comparatively few who need them most, ever see them ; should you go through the county you would find many who had never seen any of them, and vast numbers more who had only seen incidentally a few, or parts of them. The fault may be their own: your object however is to enlighten the ignorant and rouse up the inactive and call into exercise the dormant powers of society. Your success depends, in part at least, as does that of every desirable effort, in taking land yet uncultivated, exciting minds yet unaffected, sending light and improvement where there is yet darkness.

As a means of doing this, large and cheap editions of your reports or parts of them should be printed, and effectual means

put in requisition to circulate them gratuitously or at the lowest possible price among those who remain yet unmoved.

2. The tract system might usefully be brought into operation here. This is an engine of immense power in the hands of whatever body of men and for whatever purpose employed, and as might be expected the enemies and the friends of truth have availed themselves of its influence; good or evil, according to the character of the effort, has, to an incalculable extent, always been the result. Those who have worthy objects and where this means can be brought in, should be forward to avail themselves of its help. It appears to me that this power is well suited to the object of this Society, and perfectly within your means. Short essays, plain, practical, and pertinent, on subjects of local and county interest, illustrated when necessary with lithographic or other cuts, printed in a cheap form, and circulated extensively through the county, particularly among those who have taken but little interest in the improvements that are going on, could not but be attended with the best effects. It is a mistake to suppose that because men have hitherto been inactive and without interest in a good cause, they can never be drawn in to countenance and to help it on. There are many men, strong in nerve, vigorous in mind, or rich in wealth, who ought, and may be induced, to come in as active and efficient helpers.

3. I will suggest also the expediency of holding meetings in different parts of the county and at convenient seasons of the year, not for exhibition, but to communicate information: at which time *Lectures* should be given on subjects of general utility by persons appointed for the purpose, and on subjects assigned them. In this way a greater interest would be excited, better lectures ordinarily secured, and when judged expedient, particularly adapted to the wants and interest of that part of the county where the meeting is held. With the talent possessed by the members of the Board of Managers and the zeal felt by them, it would not be difficult to secure from their own body men enough to perform this service for some years; there are, too, many other public-spirited and able men, who if specially invited, would give an enlightened and encouraging assistance to an undertaking of

this kind. Every such lecture would kindle up a new spirit in the neighborhood where it was delivered, keep up inquiry where an interest was already felt, preserve in remembrance the Society and its objects, new subscribers would be obtained, and thus new talents and new interest secured to your cause.

I will ask whether it would not be well to appoint local or town committees, who should be requested to collect and communicate to the Society information of any instances of good cultivation, or new articles of produce or manufacture, and whatever else they may think of common interest within their respective towns. There are no doubt many instances of good husbandry and useful inventions and easy methods of accomplishing business in the county, of which there is no general information, and of which the public, under existing circumstances, are not likely to be made speedily acquainted. There are many truly worthy and skilful farmers and mechanics, who not being much accustomed to the pen, feel a reluctance, and indeed would meet with some difficulty in making out a written account of their operations, who at the same time would readily communicate in conversation all the information necessary to enable those used to writing to give a full and useful account of their improvement and successful experiment. Information relating to such customs and other useful and important subjects might reasonably be expected from the proposed committees; for not only their own public spirit, but the character and reputation of their towns, would excite them to activity and promptness in the business to which they were appointed.

A depository is needed, where models and specimens of agricultural inventions and other things of general interest may be placed. Many things which are brought to the public shows, would be readily left in such a place, while from various sources both within and out of the county, such an establishment would be filled faster than would at first be anticipated. It would serve also as a medium through which new or valuable varieties of seeds, plants and fruits might be spread abroad more extensively and readily than can under existing circumstances be effected. The advantages would certainly be great, and the

facilities which it would afford to the designs of this Society very numerous. Some difficulties certainly present themselves to this object, the greatest of which are those which the local circumstances of the county present, and the rotatory mode of holding the annual exhibitions. These are certainly unfavorable circumstances so far as the subject proposed is concerned; yet I think not sufficiently so to prevent the carrying it into effect. A depository placed in the centre or in either of the large towns, could without great difficulty be visited from every part of the county; and though of greater advantage to those living nearest, would be of more advantage to the most remote than none; imperfect and unequal in many things, but better than *destitution.*

Horticulture is so much associated with the general principles of the Society, and so interesting and profitable in itself, that I will not pass over this opportunity of suggesting the expediency of some efforts on your part to encourage a more general attention to it. Large portions of our citizens and professional men, merchants, and mechanics, have or might easily have small enclosures, which it would be much to their advantage in point of property, health and morals, to cultivate. If this were done in a neat and skilful manner, it would add greatly to the appearance of their places, and spread over the county many new attractions. A garden is a most lovely appendage to a great farm, and is sure to afford a double reward, in pleasure and comfort, for every hour's labor spent in it. Those who have never effectually tried the experiment, may profess to doubt this observation, and farmers who keep no particular account of their daily expenses, may say that they cannot afford time to cultivate one. But experiment will produce the conclusion in most minds which I know it did in one intelligent citizen of the county, who said, 'before I tried, I thought I could not bear the expense of a garden, but now I can hardly conceive how I bore the expense of a family without one.'

A general and thorough survey of the agricultural and manufacturing interest in the county is much needed, and this by practical men. The object of a county society is to lay open and improve its own resources; to encourage attention to those

things which promise best in that region, and to communicate such information as will there be useful. How can this be wisely and successfully executed without an intimate and extensive knowledge of what is doing, and the success which has attended individual and variously directed operations. Much of the information referred to is undoubtedly now possessed and additional knowledge is acquired every year by the operations of the Society; yet I am sure, the most experienced will be the last to think that no further investigations are needed. I certainly have not knowledge enough to justify me in saying that patronage is unequally or unwisely extended to any article of produce or manufacture; from the character of those who have the direction of these things, we may confidently believe that such cannot be the case; yet I am certain that the best informed among them will be the most ready to receive with candor the suggestion that, after all, this may happen. I am more particular in reverting to this from a striking similarity of the articles encouraged by the County Associations through this Commonwealth, notwithstanding a considerable variety in the soil peculiar to each, and the different comparative worth of the same kind of produce arising from local circumstances and the occupations of the inhabitants.

An analysis of the soil of this county would be attended with great advantage. Every vegetable is a chemical formation, as strictly composed of the ingredients taken from the adjacent soil and the atmosphere, as a loaf of bread is from the contents of the flour-barrel and the yeast and liquid used to mosten it, and must be more or less perfect according as the elements of which it is made up exist or are present in a more or less just proportion where it is elaborated. A defect or over supply of either of the constituent parts which enter into the formation of a crop must render the production less abundant in quantity or less excellent in quality, just as too much rye or Indian meal will render the noble New England loaf less the glory of our tables. All vegetables, not being composed of the same elements, or if of the same, not exactly in the same proportion, it is quite obvious that they must require different soils to arrive to the greatest perfec-

tion in amount and quality. This principle is in a degree understood, and the practice of farmers in many things is in accordance with it; but it is by no means sufficiently understood or regarded. From a want of this knowledge or disregard to the principle, fields are often laid down with a kind of grass, or planted with grain, or devoted to vegetables, ill-adapted to the soil, and manures used quite unsuited to the object for which they are employed; animal and vegetable additions made where these are already too abundant; mineral preparations spread on where the earth is already rendered comparatively sterile by their superabundance. From causes which I should not have time to explain, such applications may have a temporary good effect, though in the end they must prove hurtful. Many manures operate on the earth as strong drink upon the human system, commence with excitement and end with exhaustion. Others encourage the growth of plants, but not in the parts most desired; they perhaps increase the top when the roots are looked for, or they nourish the stalks without filling the grain.

I am well aware that the wise and merciful Creator, in condescension to the necessities of our race and the numerous animal creation, has so generally diffused the elements of vegetation, that allowing for the effect of climate and other obvious causes, there are but small portions of the earth which will not cause to grow whatever is committed to it. But there is a vast difference between a thing's growing and arriving to its greatest perfection, between an article's just paying for its culture and yielding a generous profit. It should be recollected that it is not the first fifteen or twenty bushels of corn, for instance, which constitutes the profit of cultivation, but the two or three bushels which remain after all expenses are met. The man who raises twenty-four bushels on the acre may actually make twice as much as he who gets but twenty-two. What is needed is such a knowledge as will enable men to obtain these additional bushels, or teach the farmer where the land is not suitable for corn to be content to raise such things as it will produce. In another county in this state, Mr. N., a strong, resolute, working man, used to say, 'I know that my farm is as good as my neighbor M's, and that I have as

good a plough, can hold it with as firm a hand, and hoe as well, and I can therefore raise as good a crop of corn ;' his ambition was a little moved on the subject; he spared neither pains nor labor and generally got as large a crop as his neighbor. But it cost him so much more, that he was a loser while the other received an encouraging profit, and truly *worked* himself out of an estate while his neighbor *worked* himself into one. Had he understood the principle of vegetation, he would have cultivated grass; for the produce of some of the more valuable kinds his farm was peculiarly adapted, and the result would have been as happy as in consequence of his ill-judged practice it was adverse. This is only a single instance among many, but it shows conclusively that a knowledge of the constituent parts of the soil in each field and of their combinations, together with what each kind of grain, vegetable and grass require, is indispensable if men will manage their farming concerns to good advantage, and obtain the largest crops with the least possible labor.

The want of fuller information on this subject is attended with another evil. It renders the details of successful culture, as published in your reports, less useful. For of what advantage can the account of an agricultural experiment be, if the field taken for its repetition be composed of different elements, or of the same elements differently proportioned, or held in different combination or solution. The want of discrimination here, has often brought such reports into discredit, and occasionally subjected the persons who made them to suspicions in respect to veracity,—and not in a few instances involved men in unproductive labor and expense essentially injurious to them.

There are indeed so many reasons why such an analysis should be made, I am constrained to express it as my opinion that it should early engage the attention of this Society.

Something of this has been virtually done under the patronage of the state,—enough to show how intimately connected the subject is with the best success of agriculture, enough to convince those who have looked at the result, of the enlightened wisdom of our government in the provision which they made for the survey of the state, and enough to manifest the science and enter-

prise of those who were engaged in carrying this order into effect,---but not enough to answer the necessities of the community on those subjects which this Society is designed to promote. A careful analysis of the soil in every locality is wanted. The chemical alterations required to render it most productive, and the medium by which these changes can be effected, should be explained. And till this is effected the farming interest will not flourish as it ought, nor will the noble purposes of this Society be crowned with full success. There are men in this county ably qualified for this business, and there are riches enough: if therefore the funds of this Society are not adequate to the expense of such an undertaking, I am persuaded that a special appeal made to the public spirit of an enlightened and liberal community, would meet with the most encouraging success. I must therefore express my strong hope, that these suggestions will so commend themselves to the enterprising and enlightened Directors of this Society, that they will take measures to carry the plan into operation.

It is certainly desirable to have a more full and general exhibition of the various productions of agriculture and manufacture than has hitherto been obtained. A desire to obtain the premium for an article offered when fairly entitled to it, is by no means an improper motive for exhibiting what persons may suppose of peculiar merit; for thus a man only receives from the public which is to be benefited by his improvement, a remuneration always small enough for what as a first experiment must have required special effort and expense.

This inducement to bring out the results of labor and skill should not therefore be withdrawn; yet experience has shown that it is not broad enough, nor elevated enough, nor powerful enough, to secure the object in view. We never have on these occasions any thing like a general and full specimen of the industry and skill of the citizens of this county. Other motives of a higher and more influential character must be called in. Men should be made more impressively to understand and feel, that the object of this institution being public, it should receive the active and ready support and countenance of an enlightened

community, and that as the design of the annual exhibition is public improvement, whoever has it in his power to promote this end and yet withholds his assistance, fails in some of the obligations of a good citizen. All should be forward to learn, and all according to their means to communicate information. Almost all persons have some skill or success in their efforts peculiar to themselves, and therefore have it in their power to do something for the general benefit. Every thing of a useful character adds something to the interest of the occasion, while the amount of good must depend greatly on the number and variety of the specimens brought forward. All who can, should be present on such occasions, and those who come should bring something with them : even should it not prove the best, its exhibition may still be useful. The man who brings the best he has, is entitled to praise, while he who has brought nothing, certainly has no right to complain if he find but little to interest or instruct him ; and least of all should those complain who affect to be dissatisfied with the way in which things are conducted here and yet do not devise and set in operation better ways.

I must take the liberty to address a few observations to the numerous and respectable assembly of ladies present on this occasion. I regard with peculiar interest the part they take in the object for which we are together, for a sentiment early embraced has been confirmed by observation in every succeeding year, that the enterprise, industry, the moral character, gentlemanly conduct, and love of home in men has a most intimate and close connexion with the order, taste and skill with which things are managed at home. I should not be at all apprehensive in bringing the correctness of this sentiment to the test, by carrying this assembly to the houses and showing them the husbands, the fathers and brothers of those who have contributed by their invention and industry to the interest of this day, or now favor us by their presence.

I suppose the females in this county have contributed their full proportion to the interest and usefulness of these exhibitions, and very sure am I that they have derived their full share of advantage from them. I have in several instances been personally

acquainted with the good which has by this means been effected. Increased industry, taste, refinement in manners, and order in the management of domestic concerns, in many families, have been the happy result. Many a man has found his table more genteelly spread, furnished with better butter and cheese, his floors covered with good and substantial and in some instances quite elegant carpets, a handsome rug spread before the fire place, ornaments upon the mantelpiece, his armed chair furnished with a comfortable cushion, and many other neat and pleasant things, and has ever since loved his wife and daughters and home better, worked with increased animation, felt a generous pride in exhibiting these things to his neighbors and friends when they called, and he is always careful to add that nothing was taken from the granary or stall to foot an *alarming* merchant's bill. They have all sprung up like magic.

Industry, taste, and refinement, always easily communicated in the female sex, have been powerfully and extensively promoted here; and as might be expected, contentment, virtue, love, and manliness, have followed in the train. If such have been the fruits, when as yet we have had but limited specimens of the taste, industry, and invention of the fair, I would ask what may not be expected should we be favored with a full exhibition of what taste and industry have in this county accomplished. I feel perfectly convinced that those females whose means of improvement have been good, could in no way, with as little sacrifice of time and labor consult better the advancement of their sex in the above and other like excellences, than by exhibiting on these anniversaries specimens of their own works. Knowledge would be thus communicated to those who have a desire but not the best opportunities to improve; a spirit of generous emulation be awakened; neatness, order, enterprise, and comfort would be introduced into many families of the less-instructed and uncultivated parts of society.

I was about to add a few remarks on another subject, but am admonished by the passing of time that I must close. Before I do this however I must be permitted to call to recollection the remark, in which at the opening of this address I spoke of the

object of this Society as being of a worldly nature. This I did, not because I suppose it has no bearing upon moral and future concerns. I by no means wish to inculcate the sentiment which I fear has too often been inculcated, that the conduct of this world's concerns can ever be separated from the moral condition of the soul or its prospect in a higher or more perfect scene of action. The abstract and subtle discriminations of acute and fine-spun sophistry have left, and must leave, the connexion between the outward conduct and the inward feeling, the business of the present life and the retributions of eternity, unaffected. Assuming therefore in the present case, that the motive is good, and the comparative worth of every part of life justly estimated, how certain it is that in proportion to the enterprise and diligence and attention to the duties of this world will be the actual advancement of man in the scale of moral attainments. How certain that institutions like yours, designed to encourage industry, economy, enterprise and carefulness, and which indeed direct the attention to the works and ways of God, and develop the riches of his wisdom and goodness, must have a favorable bearing upon the understanding and the heart. When I commenced this address it was my intention to have dwelt more particularly on this point than I have done. I think it would be both interesting and useful to show how certainly every real improvement in the condition and outward circumstances of men, tend to correctness of feeling, elevation of conduct, moral rectitude, benevolent action, and devotional dispositions.

If the proper and wise conduct of this world's concerns lead the mind and heart to God, how naturally does the reflection come in, that all the wisdom and skill a man possesses, comes also from him. Just and appropriate is the observation of one of the holy prophets who says in reference to the enterprising and successful yeomanry of his times, that *his* (that is the farmer's) *God doth instruct him and direct him.* In no business of life is there greater need of that wisdom which cometh from above. You will therefore receive with interest the account which one of the wisest of men gave concerning his own conduct in relation to this matter—" when," says he, " I perceived I

could not otherwise attain this wisdom except God gave it me, I prayed unto the Lord and besought him with my whole heart, and said, O God of my father give me wisdom, for hardly do we guess aright of things that are upon the earth, and with labor do we find out the things that are before us." In regard to the wisdom which men have acquired and the success which has in consequence attended their efforts, the wise and good will be ready to adopt the language originally uttered in a similar connexion, *This also* cometh forth from the Lord of hosts who is wonderful in counsel and excellent in working.

REPORTS.

No. I. OF COMMITTEE ON FARMS.

The Committee on Farms, regret that they are compelled to report that no claims for the Premiums offered on the "Management of Farms" were entered the present season. They hope that this is to be ascribed to the unfavorable prospects of the season, rather than to an indifference in the Farmers of Essex to the important objects contemplated by the Society, in offering these liberal Premiums.

To this Committee was also referred the subject of Irrigation of Lands. Only one claim was entered for experiments in Irrigation,—by Mr. Ebenezer Jenkins, of Andover South Parish. Your Committee visited his farm on the 25th of July last, and witnessed the result of his experiment. Mr. Jenkins, by erecting a cheap dam in an adjoining pasture, and by digging a small trench for about thirty rods, has taken the water from a brook and so conducted it as to irrigate about an acre of dry gravelly upland and about half an acre of meadow land adjoining. In consequence of this, he believes that he has obtained nearly double the quantity of Hay which the land formerly produced. Your Committee estimated the Hay taken from the acre of upland, to be about 2700 lbs. The grass standing on the meadow, was very good. He states the expense of the experiment including $10 paid for the use of the water for ten years, to be $30. By altering his trench, he can convey the water over another acre of land, and intends doing so the next season. Your Committee did not consider the experiment sufficiently

extensive or complete, to be entitled to the Society's premium; but regarding it as a specimen of well directed industry, highly creditable to Mr. Jenkins, and being desirous to excite others to similar attempts, they recommend that a gratuity of five dollars be presented to Mr. Jenkins.

By order of the Committee.

JAMES H. DUNCAN, *Chairman.*

Sept. 27, 1832.

No. II. OF COMMITTEE ON MILCH COWS AND HEIFERS.

The Committee of the Essex Agricultural Society on Milch Cows and Heifers offer the following Report—

This subject is interesting not only to those who make farming their business, but to every family whose situation and circumstances make the keeping of this valuable animal practicable; it is important not only because cows supply the market with milk and butter and cheese, but because they contribute so much to substantial domestic comfort and convenience.

Sportsmen and naturalists, and perhaps some others of the *unproductive class*, have supposed their favorite horse to be the most valuable of domesticated animals, but the calculating utilitarian, and the discriminating farmer, have with united voice pronounced the cow, "the noblest conquest made by man."

There is a great difference in the quantity and quality of milk given by cows of the same appearance, and treated in the same manner. Not unfrequently in the same yard, the product of one cow is worth double that of another. A good cow will more than repay her cost in the milk she will yield in six months. Suppose her to give six quarts per day, this, for six months, at three cents per quart, amounts to more than thirty dollars. It is presumed that every man who keeps a cow is desirous of having one of superior qualities, but it is more the result of good fortune than prudence, if he obtains such an one, in the ordinary

way. He goes to the market or the drover and purchases an animal which those who have had an opportunity to try, are willing to dispose of. The raiser of stock knows his best animals, and will prefer to reserve them at home. We think the farmers of our county should make the experiment of rearing their own cows; the cost may be a little enhanced, but the chances of having better stock are greatly increased. Let them raise the young of their cows which they *know* to be good milkers and to have other good properties, and in a few years, instead of four or five quarts as now, the average yield would be eight or ten. We have heard of great success in improving stock in England, we have witnessed something of it here, and are satisfied that with proper attention, our cows will become much more valuable. In raising stock at home, there are these additional advantages, that the animal is already acclimated, there is no danger of her straying, and she is accustomed to the food and treatment. A change of situation and fodder is sometimes fatal, and frequently causes, at least, a temporary derangement of the system. This may be one reason why imported stock, excellent as some varieties of it unquestionably are, have not answered the expectations of those who have made an unsuccessful, because perhaps, a not sufficiently protracted and careful trial.

A principal cause of the general character of our cows being so low, is the quality of their winter keeping. Their natural food, in their wild state is green and succulent. Their winter keeping with us is, almost exclusively, dry hay. The quantity of moisture lost in curing different kinds of grasses has been ascertained by accurate experiments, and it is found that

100	lbs.	Green	red clover	make	27	lbs.	of hay,
100	"	"	herds grass	"	40	"	"
100	"	"	fresh meadow	"	38	"	"
100	"	"	salt grass	"	39	"	"
100	"	"	Eng. 2d crop	"	19	"	"
100	"	"	corn stalks	"	25	"	dry stalks,
600					188		

so that more than two thirds the moisture, which must be a large constituent in the secretion of milk, is lost in the process of drying. Do not such experiments, as well as common observation demonstrate, that our farmers do not provide a sufficiency of green food? We think it would be profitable to raise root crops, such as mangold wurtzel, carrots, Swedish turnips and even round turnips, to feed out to cows at the season when other succulent food is inaccessible. If a cow is suffered to become poor in the winter, it will be difficult to restore her flesh, and her product of milk, for that year will be greatly diminished. Keep no more stock than can be well fed both through winter and summer. It is more satisfactory and pleasant to obtain ten gallons of milk from five well-conditioned, than from ten "ill favored and lean fleshed kine."

Neither very young, nor very old cows are considered so valuable, for their annual product, as those of intermediate ages. Unless of extraordinary properties, they should not be kept after they are ten or twelve years old. Such cows require better keeping, and are more liable to accidents and diseases. No kind of stock better compensates for liberal feeding. If a supply of roots has not been procured, a small quantity of meal or a few ears of Indian corn daily, will cause a perceptible improvement. A cow that is worth keeping is worthy of liberal feeding. On short commons and poor fodder, her milk qualities and her progeny will degenerate. Give her an abundance of nutritious food, and in return, she will give you

> "New milk that, all the winter, never fails,
> And, all the summer overflows the pails."
>
> * II. Eclogue of Virgil, 22d line.

We think it unnecessary to extend our remarks, since this subject was so fully and satisfactorily discussed by the Rev. Henry Colman in his report, published in the last year's transactions of this Society, and which is in the hands of every farmer who feels an interest in such investigations. And we are doing but common justice to that distinguished scientific and practical cultivator, who has since removed to a distant part of the state,

* "Lac mihi non æstate novum, non frigore defit."

when we express a sentiment of lasting gratitude and profound obligation for his valuable services as a member of this Society, as well as for his very interesting publications on subjects connected with rural economy.

The Committee on Milch Cows, and Heifers report—that eleven Milch Cows were offered for exhibition and premium, viz.

For exhibition, a very handsome cow, in fine order, by Ebenezer Moseley of Newburyport.

Moses Bartlett of Newbury, offered a handsome five years old cow, which, on common pasture feed, has made 10 lbs. butter in one week.

Nathaniel Ladd of Bradford, offered a cow six years old, which, from June 1st to Sept. 26th, made 90 1-4 lbs. butter, besides supplying three families with milk; fed on grass only. Undoubtedly a good cow, but the statement was not sufficiently explicit.

A small sized cow belonging to Rev. Mr. Miltimore of Newbury, which, from May 27th to Sept. 25th, made 87 3-4 lbs. butter, besides supplying a family of eight persons with milk and cream.

A cow belonging to E. W. Allen of Newburyport, which, from June 1st to Aug. 15th in the year 1830, made a little over five pounds of butter per week, besides supplying two families with from three to four pints of milk per day—and she has yielded as much this year as in 1830.

Stephen Tilton of Newburyport, offered a cow four years old, which is a good milker.

The Committee have awarded to Parker M. Dole of Newburyport, for his two native cows, which, from about the 1st of May to Sept. 27th, have made 157 lbs. butter, besides about 40 gals. milk used and sold: kept in a poor pasture, a gratuity of $2 00

To Edward Titcomb jun. of Newburyport, for his four years old cow, half Holderness, which on scanty keeping, has yielded from July 10th to Sept. 26th an average of 10 quarts per day, a gratuity of 2 00

To Timothy Noyes of Newburyport, for his six years

old cow, which in the last thirteen months has yielded 1115 gallons of milk, more than 11¼ quarts per day, (her butter qualities not mentioned,) a premium of 5 00

To John O. W. Brown of Newbury, for his seven years old cow, which, from June 6th to July 11th, gave more than 15 quarts of milk per day on ordinary pasturing, and which, besides supplying 3 quarts per day for families' use, has afforded from June 1st to Sept. 26th, 107 lbs. 7 oz. of butter, a premium of 10 00

To Timothy Flanders of Haverhill, for his cow, nine years old, raised in Deerfield, N. H. 15 00

On common pasture feed, (till the time when stalks became fit to cut,) besides 46½ gallons of milk for family use, she has yielded milk from the 20th April to Sept. 22d, from which 163 lbs. 4 oz. of butter were made. She has never given more than 16 quarts per day. Mr. Flanders's statement was well authenticated and satisfactory.

The Committee award to Nathaniel Jackson of Newburyport, for his two years old heifer, which, from June 1st to Sept. 27th, has given more than two gallons of milk of good quality per day, the 2d premium of 5 00

To John Torrey of Newbury, for his three years old heifer, which has yielded more than two gallons of milk per day, of superior quality, a gratuity of 2 00

To Ralph H. Chandler of Andover, for two heifers, one two, and the other three years old, which have yielded a good quantity of milk and butter, a gratuity of 2 00

Capt. Hector Coffin offered, for exhibition only, two handsome heifers of native stock; in his statement, Capt. C. remarks, "I make it a point to bring all my heifers in with their first calves after pasturing time has commenced, so that green fodder may aid in swelling out their young udders; which process followed for the two or three first years, invariably makes a good milker."

Col. Moses Newell of West Newbury, offered for exhibition, four very handsome two years old heifers, one eighth Admiral, not in milk; they were of promising appearance. Col. N.

raises his own dairy stock, and it is safe to follow the example of a farmer of so much skill and discrimination.

For the Committee.

DANIEL P. KING.

Sept. 27, 1832.

No. III. OF COMMITTEE ON DAIRY.

The Committee on the Dairy, report—that there was presented to their notice, on the day of the Exhibition at Newbury, but one parcel of Cheese, and five parcels of Butter. The cheese was offered by Moses Newell of West Newbury, and for which they award the Society's second premium of *ten dollars*.

They regret exceedingly, that in a County where there are so many good farmers, that make good cheese, there should be so few willing to exhibit it.

But three of the parcels of butter exhibited came within the rules prescribed for the premiums. These were offered by Mrs. Betsey Parker of Andover—Hector Coffin of Newbury, and Ralph H. Chandler of Andover. The butter exhibited was of good quality.

They have awarded to

Mrs. Betsey Parker,	1st premium,	12 dollars.
Hector Coffin,	2d "	10 dollars.

As the condition on which some of the premiums on Butter were offered, did not admit of their closing their Report on the day of the Exhibition, they have waited until this could be done with propriety.

There was but one claim entered, for the premiums offered, for the best produce of butter, in the six months next following the 20th of May, &c—this by Hector Coffin, Esq. of Rock Farm, Newbury.

Mr. Coffin's statement, which is hereunto annexed, was satisfactory to the Committee; and the specimens of butter exhibited by him were of good quality; and his entire management of

his Dairy affords an example worthy of imitation—and the Committee award to him the Society's first premium, of *twenty dollars.*

All of which is submitted by

JUSTIN SMITH,
DANIEL FOSTER,
JESSE PUTNAM.

Dec. 1, 1832.

HECTOR COFFIN'S STATEMENT.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY, ON THE DAIRY.

Gentlemen—

I offer you a sample of Butter for premium, made on Rock farm, of exceeding one hundred weight, in view of both the premiums offered by the Essex Agricultural Society.

That of the June make, is in two stone pots; and that of subsequent manufacture in a tub, consisting of balls stamped.

The June butter was made from five Cows, all native breed, viz :—

Pink,	8	years	old,	calved	March	20th,	Five Cows.
Violet,	11	"	"	"	"	28th,	
Daisy,	12	"	"	"	"	29th,	
Strady,	12	"	"	"	April	17th,	
Flora,	12	"	"	"	"	17th,	

All of which had their calves disposed of before the first of June; and on the 15th of June I added to their number a three years old heifer just deprived of her first calf; which animal I called Rose, in lieu of one by that name I sold in April. From these five cows and heifer, within the prescribed limited time, 181 lbs. butter was made. The quantity made during the season thus far is near 500 lbs., and will be stated exactly at the expiration of the six months after the 20th of May last.

To the five above cows we added, as above stated, heifer

Rose,	3	years	old,	calved	in May,	Three Heifers.
Flirt,	3	"	"	"	May 26th,	
Fanny,	2	"	"	"	June 3d,	

From the above five cows and three heifers, about 800 lbs. of different kinds of cheese have been made.

The above cows and heifers are all from native breed. Their keeping in the summer is common pasturing; and in the winter they are fed with fresh meadow hay and salt hay mixed, and never have grain or provender of any kind, except after calving in the spring, when they have a quart of meal mixed with water per day and some better hay.

For butter, the milk is strained into earthen and tin pans, also zinc, (but the women prefer the earthen); then set on the brick floor of a very cold dairy cellar and skimmed before turning sour; churning as often as requisite, twice or three times per week in Galt's patent churn, keeping the cream as cold as possible. As soon as the butter is gathered, the butter milk is immediately drawn off; the churn is immediately filled with cold water from the well, and the butter well washed by churning a few minutes; then taken out, after standing to cool, and passed through the operation of salting and first working, when it is put in pans on the dairy cellar floor for the day and night, and next morning thoroughly and completely worked, and packed down in stone pots or made into balls for stamping; when cool, stamped; and if to be kept, put down in pickle.

N. B. The best pickle is made of washed Turks Island salt and saltpetre, with a proper proportion of loaf sugar.

I am very respectfully, your obedient servant,

HECTOR COFFIN.

Newbury Rock Farm, Sept. 27, 1832.

N. B. The pans are washed after use, and then boiled in a cauldron (of pure water) and cooled (in the shade) before milk is again strained into them.

The churn is filled with cold water over night, before use; and washed with boiling water after churning.

NEWBURY ROCK FARM, NOVEMBER 20, 1832.

Gentlemen,

Agreeably to the foregoing duplicate of statement placed before you the day of the cattle show, I now subjoin the required

statement necessary to obtain the premium on butter made the next six months after the 20th May, ending this day; together with a continuation of the system in making butter in cold weather. The whole quantity of cheese is no more than before stated, and butter to this day as weighed and accounted for by my dairy woman, as churned, is seven hundred and seventy one pounds.

Our average family through the season has been equal to ten persons, for whom milk has been used as required, without limit.

Since cold weather, the system of butter making has been altered. The first of October the milk was set on shelves in a room above ground, and the same process of making the butter continued as long as the warm weather lasted; after which, before churning, the cream in stone pots was set near a cooking stove for a day or two and made sufficiently warm to sour, when it is immediately churned, and the before mentioned process pursued. The souring of the cream, and churning it while in this state and warm, causes it to come quicker and to continue the yellow hue of summer, together with the flavor being much richer, and keeps longer sweet and sound. While the cream is near the fire, to be soured, it should be occasionally stirred.

My dairy woman in former seasons, where she has not had the advantage of the strong heat of a stove, has soured the cream by gently heating an oven, in which she has put the cream in tin pails, and continued an equalized heat by putting in fresh coals as occasion required till effected.

I am, gentlemen, very respectfully, your ob't servant,

HECTOR COFFIN.

N. B. The salt used, consists of one third clean washed Turks Island, and two thirds Liverpool blown salt; to every pound of which three quarters of an ounce of Saltpetre is added, the whole mass finely pulverized and passed through a fine sieve; and one ounce of this mixture is used to every pound of butter in summer and nearly an ounce in cold weather.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON MILCH COWS AND HEIFERS.

Gentlemen,

I present for your examination my two heifers, Flirt and Fanny, of native stock, selected and improved by selection. Flirt, of my native Cow Primrose, (nine years old), by a good native Bull, calved in April 1829, now three years old, came in with her first calf, May 26th, 1832.

Fanny, out of Violet (ten years old), came in with her first calf, June, 1832.

Curiosity caused me, from their being large milkers, to weigh their milk a few times in the early part of July, and Flirt's milk averaged from 11½ to 13 lbs. in the morning, and from 15 to 17 lbs. in the afternoon; that is, from 26½ to 30 lbs. per day. Fanny's milk averaged from 10 to 11½ lbs. in the morning, and from 11½ to 14 lbs. in the afternoon; that is, from 21½ to 25½ lbs. per day.

Flirt was weaned in the usual way, and put to pasture. Fanny was weaned when three weeks old, and suckled or fed by hand on skimmed milk till eight weeks old, with dry meal in a box and hay in a rack always by her, at which time she was put to pasture for the season, and neither of them have tasted provender since, of any kind, except after calving, when, for a week I gave them a quart of meal mixed with water, daily. In the summer they have had common pasturing, and in winter have been fed on the best meadow (fresh) and salt hay without any extra food. During the winter they and all my cattle are carded every morning.

Our engagements have been such this summer, we have not had time to set the milk of these heifers separate, and make their butter from their cream separate from each other, and also separate from the other stock; I therefore do not present them for premium, but for your examination, with the belief they will receive your favorable notice.

I am, very respectfully, your ob't servant,

HECTOR COFFIN.

N. B. I make it a point to bring all my heifers in with their first calves after pasturing time has commenced, so that the green fodder may aid in swelling out their young udders; which process, followed for two or three first years, invariably makes a good milker.

Newbury Rock Farm, September 27th, 1832.

No. IV. OF COMMITTEE ON DOMESTIC MANUFACTURES.

The Committee of the Essex Agricultural Society, on Domestic Manufactures, report—

That they have attended, with pleasure, to the duties assigned them. If it had ever been questioned, the observation of this day would satisfy us that a good portion of the spirit of ingenuity and enterprise which characterizes New Englanders, had fallen on the sons and daughters of the County of Essex.

Although the Society does not offer specific premiums for articles manufactured by Incorporated Companies, it will always afford the members great satisfaction to witness specimens of the various products of the several factories in the County, and the Committee to whom this subject is intrusted will not fail to notice in a favorable manner, such articles as appear to deserve commendation. As politicians, we do not wish to obtrude our opinion, but as farmers we express but our honest conviction when we say, that to encourage manufactures is to help ourselves: that whatever conduces to the establishment and protection of these, conduces also to the prosperity of agriculture: they are intimately and inseparably connected, and they must flourish or decline together. Wherever there is a manufacturing village or a manufacturing family, there is a home market, and the experience of past years has proved that a home market is the only one to be depended upon. Let manufacturing establishments be multiplied, and give stability to their operations by preventing ruinous foreign competition, and farmers need never

fear that they will not be able to dispose of the surplus productions of the soil.

There is one species of domestic industry which in the opinion of the Committee demands a larger portion of attention, the cultivation of mulberry trees and the rearing of silk worms. The business requires no capital, and the labor and care are light and pleasant. It interrupts none of the ordinary occupations of the farmer, and affords employment for those members of his family who might otherwise be idle. It innocently occupies, at home, the time of those whose health and virtue might be exposed abroad. We hope that this subject will soon excite that interest which it deserves, and employ that labor and care which it so handsomely remunerates.

The Committee consider themselves under obligations to give the preference to articles of substantial comfort and utility. Of such, there was a good proportion at this exhibition. Carpets, counterpanes, and other indispensable articles.

And since fashion and taste have prescribed that "women *must* adorn themselves with broidered hair, and gold, and pearls, and costly array," we are glad that the fairer and gentler part of our communities are not beholden to foreign manufactures for many of those fanciful and elegant ornaments with which they are accustomed to deck their persons. There was a very handsome display of delicately finished articles of female dress, which was very flattering to the taste, ingenuity and industry of those who wrought them. In many of them, there was much elegance in the device and much skill in the execution. There must be a peculiar satisfaction to the wearer of such beautiful decorations when she can say, my own fancy designed, and my own hands perfected them. *She* is brilliant with her own light, while those who procure such ornaments by other means than their own industry, too much resemble that dishonest bird in the fable, which bedecked herself with borrowed plumes.

It is always pleasant to reward the labors of children and youth, as it excites them to new endeavors, and encourages them to greater efforts. By well timed commendation and suitable rewards, children are stimulated to application, and so acquire

habits of industry, which, under all circumstances, are an inestimable treasure. There were several handsome and ingenious articles, the work of children, some of whom were not over seven, and one only five years of age.

The Committee have awarded the following Premiums and Gratuities, viz.

To Mrs. Hannah Bailey, of West Newbury, for the best piece of yard wide carpeting, 30 yards, 1st premium, 5 dollars.

To Mrs. A. Woodbury, of Newburyport, for the 2d best carpeting, 42½ yards, - - - - 3 dollars.

To Hannah Foster, of Andover, for the best straw bonnet, - - - - - - - 5 dollars.

To Sophronia Jones, of Newburyport, for the best wrought hearth rug, 1st premium, - - - 3 dollars.

For a beautiful rug, entered by Wm. P. Endicott, wrought by a lady in Salem, - - - - 2 dollars.

To Louisa Peters, of Andover, for a piece of Woollen Cloth, 2 dollars.

To Phebe H. Abbott, of Andover, for four pair of woollen hose, 2d premium, - - - - - 1 dollar.

To Mrs. Jacob Osgood, of Andover, for 20 yards of linen cloth, 1st premium, - - - - - 4 dollars.

To Mary Kent, of Newbury, for do. - - 1 dollar.

To Mrs. Jacob Osgood, of Andover, for 23 yards of linen diaper, - - - - - - 2 dollars.

To Mary Kent, of Newbury, for linen table cloths, 1 dollar.

To Susannah N. Moody, of Newburyport, for the best wrought counterpane, 1st premium, - - - 4 dollars.

To Hannah Abbott, for the 2d best do. 2d premium, 2 dollars.

To Mary Ann Bishop, of Newburyport, for the best wrought lace, a veil, 1st premium, - - - 3 dollars.

To Lucy Coffin, of Newbury, for the 2d best do. 2 dollars.

To Abigail Woodbury, of Newburyport, for a veil, a gratuity, 1 dollar.

To Susan H. Hodge, of Newburyport, aged 7 years, for the best specimen by a child under 12 years, lace, 1st premium, 3 dollars.

To Elizabeth Tilton, of Newburyport, aged 7 years, for the 2d best do. being lace, and bead work, - 2 dollars.

To Judith Bartlett, of Newburyport, for a rag carpet, a gratuity, - - - - - - - 1 dollar.

To A. H. H. and E. Pettingill, for specimens of industry and taste, a gratuity, - - - - - 2 dollars.

To Mrs. Pingree, of Newburyport, for a rag carpet, 1 dollar.

To Eliza A. Lane, of Newburyport, for a grass hat, a gratuity, - - - - - - - 1 dollar.

To E. Tucker, of Newburyport, for an economical carpet, a gratuity, - - - - - - 1 dollar.

To Mary Flanders, Newbury, for a cloth carpet, a gratuity, - - - - - - - 1 dollar.

To Elizabeth Piper, of Newburyport, for a hearth rug, a gratuity, - - - - - - - 1 dollar.

To Hannah W. Coffin, of Newburyport, for do. a gratuity, 1 dollar.

To Mrs. Stephen Abbott, of Andover, for do. a gratuity, 1 dollar.

To Abigail C. Foster, Andover, for a white veil, a gratuity, 2 dollars.

To Ann E. Rousseau, Newbury, for bead chains, 1 dollar.

To Mira and Ellen Parker, of Newburyport, for safety chains, one dollar each, - - - - 2 dollars.

To Mary P. Tilton, of Newburyport, do. - - 1 dollar.

To Lois Elizabeth Kimball, of Ipswich, in the family of N. Lord, jr. for a quilt, neatly wrought by her before she was five years old, - - - - - 2 dollars.

To Lydia Randall, of Newburyport, for a very handsome quilt, - - - - - - - 2 dollars.

To Abigail Greenough, of Bradford, for a velvet bag trimmed with beads, - - - - - - 1 dollar.

To Sarah B. Miltimore, of Newbury, for do. - 1 dollar.

To J. E. Griffith, of Newbury, for neat purses of silk and cotton, - - - - - - - 1 dollar.

To Miss A. Woodbury, of Newburyport, for two bead bags, 1 dollar.

To Lucy Coffin, of Newbury, for a bead purse, - 1 dollar.
To Mrs. Hannah Tyler, of Haverhill, for specimens of sewing silk, - - - - - - - 2 dollars.
To Luther Wait, of Ipswich, for do. - - 2 dollars.
Mrs. Stephen Currier, of Methuen, presented for exhibition only, beautiful specimens of colored sewing silk.
To Stillman Morse, of Newburyport, for three dozen handsome horn combs, - - - - - - 2 dollars.
To Mrs. Mary N. Merrill, of Newbury, for specimens of colored silks and other articles by her, - - 2 dollars.
To Susannah F. Barker, of Andover, for samplers, 1 dollar.
To Hannah Abbot, of Andover, for do. - 1 dollar.
To Mary Kimball, of Ipswich, for very handsome capes made of feathers, - - - - - - 1 dollar.
To Hannah Abbot, of Andover, for do. - - 1 dollar.
To Stedman & Rockwood, of Newburyport, for waxed calf skins, handsomely manufactured, - - - 2 dollars.
To Wm. Jaques, of Newbury, for do. - - 2 dollars.

Some of the labels were missing, and the notice of a few articles of merit may have been unintentionally omitted.

In concluding this report, the Committee avail themselves of this opportunity to express an earnest wish that at the next, and at all future anniversaries of the Society, the farmers, mechanics and manufacturers of the county, would bring forward the productions of their ingenuity and industry, and, as much as is in their power, contribute to make the exhibition of Domestic Manufactures in this County as interesting and satisfactory as in any other in the State. We can venture to promise those persons who bring articles of taste and utility to the exhibition, not only the gratitude of the members of the Society, but the best recompense they are able to bestow.

By order of the Committee.

DANIEL P. KING.

Newbury, Sept. 27, 1832.

No. V. OF COMMITTEE ON CIDER.

The Committee on Cider, report—that they did not expect there would be much competition, at the present season, for the liberal premiums offered by the Society for this article. The past year was very unfavorable for the production of apples, and it is understood that very little cider was made in the county.

The only application for the premiums of the society was made by Mr. James Ferguson of Newbury, who lives on the Fatherland Farm. He produced to your Committee one barrel of cider, made of the juice of the apple only, without any other ingredient of spirit. It was in no respect remarkable, either in its quality, or in the method of making or preserving. It was what would be generally called good, sound cider. Your committee, as an encouragement to others, would recommend a premium of five dollars; and that the members of the society may have an opportunity of judging of the quality, we have purchased the cider to be used at the society's dinner this day, for the sum of five dollars. This sum of ten dollars will be a liberal reward to Mr. Ferguson for the expense and trouble of making and preserving the cider and bringing it to the society's exhibition.

It is a matter of regret to your committee that, for many years past, there should be so little competition among our farmers for the premiums offered by the society for cider. Apples in this part of the country are in general in great abundance and of a good quality; and yet at many of the cattle shows in this county, not a single barrel of cider has been offered for premium. We believe there are very few of our farmers who do not have good orchards, and make cider for their own use; and when it is considered that good cider always brings a good price, and that it is a pleasant and healthful beverage, and might promote the cause of temperance by making it a substitute for ardent spirits, we are surprised that its quality should be so little regarded.

If a spirit of emulation could prevail among our farmers to make the best cider, the natural effect would be to improve the

quality of our fruit. Good apples will always meet with a ready sale, and the farmer can always turn his good cider and good apples into cash. A good orchard will give better interest than Bank stock.

The late Mr. Samuel Thurlow of West Newbury, was an excellent practical farmer. In early life he commenced setting out apple trees, principally of the russet kind, and in situations, the least inconvenient for the cultivation and improvement of the soil. He lived to receive a large annual income from these trees, for many years before his death. It is said that some years he sold apples, principally of the winter kind, to the amount of 1000 dollars.

In some towns in this county, cider and apples are annually imported from the South, particularly from Philadelphia and New York. In this county we may with proper care produce as good apples and make as good cider as are imported from those places, and so long as this is the case, let us rely solely on our own resources. It is to be hoped that this subject will arrest the attention of our farmers, and that we may soon see the good effects of the bounty of this society in the improved state of our orchards, and in the quality of our cider. While the south are zealous for nullification, let us not be less zealous to nullify the importation of apples and cider.

EBENEZER MOSELEY, *per order.*

September 27, 1832.

No. VI. OF COMMITTEE ON POTATOES.

The Committee appointed to receive and examine the best conducted experiment in raising potatoes, have attended the duties assigned them, and make the following report, viz.

That four specimens were presented for examination, and that after duly examining and considering the several claims, they have awarded as follows, viz.

To Capt. Paul Kent of Newbury, the highest premium of

seven dollars, for the best conducted experiment in raising potatoes on three acres of land.

To Mr. James Lock of Andover, the highest premium of seven dollars, for the best conducted experiment in raising potatoes from the seed of the apple or green ball of the second year's growth, agreeably to the rules of the Society.

To Messrs. E. and S. Follensbee, the second premium of five dollars, for the second best experiment in raising potatoes from the seed of the apple, they being of the second year's growth, and in quantity required by the rules of the Society.

WILLIAM JOHNSON, JR. *Chairman.*

Newbury, Sept. 27, 1832.

PAUL KENT'S STATEMENTS.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON POTATOES.

Gentlemen—

I offer for your inspection the following statement, it being the result of an experiment on several kinds of potatoes and the best method of cultivation, for three successive years.

In 1830, I planted one-third of an acre of stiff loam with potatoes; the year previous it was manured well and produced a good crop of onions. I put on no manure in 1830. After ploughing and harrowing the ground, I furrowed it both ways, so as to have five rows to a rod each way, giving 25 hills on a rod of land. I was very exact in laying out the ground. The 27th of May I planted it with seven different kinds of potatoes—1. the Chenango; 2. a round white potato which I have cultivated for ten years; 3. a potato raised by Mr. Burnham from the seed a few years since; 4. a potato brought from the eastward that was called the rareripe potato. I have never heard any names given to the other three kinds, nor is it important that they should have any, for they are worthless.

The second day of October I dug the whole piece and measured them accurately. No. 1 produced 2½ bushels to the rod, and is a very good potato but not very sightly. No. 2 pro-

duced 2¾ bushels to the rod, a round white potato, very saleable for shipping, but not quite equal to No. 1 for eating. No. 3 produced 2 bushels to the rod, about equal in quality to No. 2. No. 4, 3 bushels to the rod, a fair potato, but inferior to either of the other kinds for eating.

In 1831 I planted 100 rods of land with potatoes. The soil was a light loam; the condition as it respects manure, crop, ploughing and harrowing, the same as in 1830. I planted it on the 16th of May with the several kinds from No. 1 to No. 4 of the previous year's experiment, putting 40 hills on the square rod. On the 15th of October I gathered them. Numbers 1, 2 and 4 produced 2½ bushels to the rod; No. 3 only 2 bushels.

Thus far my object has been to determine the relative quality and productiveness of the several kinds. To ascertain the best method of cultivating potatoes I planted two acres with No. 2. On the first part I put 8 cords of manure to the acre, and after ploughing two furrows, one on each side of the lot, I dropped the potatoes which I had selected for seed in the bottom of the furrow, two and a half feet apart, then spread the manure along the furrow on the top of the potatoes. I then ploughed three furrows, and in the fourth dropped the potatoes; manured and ploughed as before until the whole was finished. On the second part I ploughed the land in ridges or back furrow, put on the same quantity of manure as on the first, dropped the potatoes in the hollows between the ridges at the same distance as the first, spread the manure on the potatoes and covered it by turning the ridges back into the furrows.

The third part I ploughed, furrowed and holed at the same distance as the first and second parts, and put the manure into the holes, dropped the potatoes on the top of the manure, and covered with the hoe. In October I gathered the whole; my product was from 200 to 250 bushels per acre. The first and second lots, where the potatoes were under the manure, produced about equally, and I should think ten per cent. more than when they were over the manure, but the first being deeper in the ground cost more labor in digging.

The present year I have planted about three acres, three-

fourths of them by first ridging the ground, then dropping the potatoes, then manuring and covering by a furrow on each side as in the second lot of last year's experiment. The remainder I planted in the same manner as third lot. I have gathered but a small part of my present year's crop, but as far as I can judge the result will be about the same as the preceding years.

From the above experiments I have come to the conclusion that as a general rule it is better to plant potatoes under, than over the manure, and that there is no better way of cultivating them, taking labor into consideration, than by first ploughing the land in ridges 3½ feet distant from each other, dropping the potatoes at 2½ feet distance and putting the manure over them, and covering by furrows one on each side.

Yours with respect, PAUL KENT.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON POTATOES.

Gentlemen—In 1830 I sowed four rods of land in my garden with potato seed, in rows fourteen inches distant from each other. At the first weeding I thinned them to about three inches by pulling out the least promising; at the second and third weeding I continued to thin them out as before, and finally left them about twelve inches apart in the rows, which gave me about 900 plants. The last of October I gathered them and from the 900 plants selected 90 of the best. In 1831 I planted the 90 kinds in hills three feet by two and a half distant from each other. In October I harvested them, reserving 20 kinds. Thus far I paid attention to the shape, color and productiveness of the potatoes. The present season I planted the 20 kinds on about 100 rods of land; after ploughing, harrowing and furrowing the land, I dropped the potatoes and put on four cords of manure, covering by two furrows. In June and July I ploughed between the rows and hoed in the usual manner. They are now in the ground and several of the kinds appear to be growing. We have only cooked of the seven kinds here exhibited. Numbers 3 and 4 are dry and mealy; the produce middling. Numbers

1 and 6 are not ripe ; I think they will be very productive ; as to quality I can say little with confidence until they are all ripe and gathered.

Yours with respect. PAUL KENT.

JAMES LOCKE'S STATEMENT.

TO THE COMMITTEE TO EXAMINE CLAIMS FOR PREMIUMS ON POTATOES RAISED FROM THE SEED OF THE BALL.

Gentlemen,

In 1831 I planted nine seeds and have kept the products of each seed separate and distinct to this time. I prepared the ground in which they were planted the present season, about the eleventh of May, by spreading the manure and ploughing it in. They were planted in drills about three and a half feet apart, the products of a single seed of the former year in each drill, and the following is the amount of the growth of this season :

Seed No. 1,	Drill 25 feet in length,	43 pounds.
Do. " 2,	Do. 33 " "	41 "
Do. " 3,	Do. 17 " "	24 "
Do. " 4,	Do. 11 " "	21 "
Do. " 5,	Do. 14 " "	25 "
Do. " 6,	Do. 16 " "	23 "
Do. " 7,	Do. 13 " "	18 "
Do. " 8 & 9,	Do. 35 " "	55 "
		250 pounds.

Numbers 8 and 9 were connected so that they could not well be separated, and were planted together. I exhibit four quarts from each seed.

In 1831 I also planted a quantity of seeds in addition to those already stated, whose produce I deem it worth while to state to the Committee as showing the amount of production in reference to the quantity of ground occupied.

These were also planted in drills and produced the present season as follows :

Drill No. 1,	60 feet in length,	72½ pounds.
Do. No. 2,	60 " "	102 "
Do. No. 3,	58 " "	115 "
		288½ pounds.

These potatoes were planted in ground somewhat higher than that which produced those offered for premium, and had on this account some advantage.

Yours respectfully, JAMES LOCKE.

Andover, Sept. 26, 1832.

E. & S. FOLLANSBEE'S STATEMENT.

TO THE COMMITTEE OF THE AGRICULTURAL SOCIETY ON POTATOES.

Gentlemen—I hereby present a statement of an experiment on raising potatoes from the balls.

In the season of 1831, I raised one quart of potatoes from the balls. June 1, 1832, I planted the said one quart of potatoes, in thirty hills, and they yielded three bushels, a specimen of which is herewith exhibited.

E. & S. FOLLANSBEE.

West Newbury, Sept. 27, 1832.

No. VII. ON PLOUGHING—DOUBLE TEAMS.

The Committee on Double Teams, having attended their duty, report,—

That nine teams were entered for premiums, only seven of which appeared. The lands contained about one-fourth of an acre, were marked and numbered accordingly, and the work was performed in the following time and manner:

Lot No. 1 was ploughed by William Moody, jun. of Newbury, Jacob Kent ploughman, and said Moody driver. They

performed the work in one hour and sixteen minutes, with 27 furrows.

No. 2 was ploughed by Bartlett J. Currier of Newbury, said Currier ploughman, and Gorham Coffin driver; performed the work in one hour and one minute, with 28 furrows.

No. 3 was ploughed by Richard Jaques of Newbury, said Jaques ploughman, and Mark Haskell driver; performed the work in fifty-five minutes, with 24 furrows.

No. 4 was ploughed by John Northend of Byfield, William Williams ploughman, and William Ayer driver; performed the work in one hour nineteen minutes, with 30 furrows.

No. 5 was ploughed by Ralph W. Chandler of Andover, said Chandler ploughman, and Joseph Chandler driver; performed the work in one hour and thirty-one minutes, with 26 furrows.

No. 6 was ploughed by John J. Adams of Newbury, Joseph Lunt ploughman, and said Adams driver; performed the work in one hour and twenty-nine minutes, with 28 furrows.

No. 7 was ploughed by Jedediah H. Barker of Andover, said Barker driver, and Mr. Morse ploughman; performed the work in one hour and twenty-nine minutes, with 28 furrows.

The Committee can truly say, the work was well performed by all the teams. But after consultation, award the premiums as follows:

The 1st premium to Richard Jaques,	- -	$12 00
" 2d premium to John Northend,	- -	$10 00
" 3d premium to Bartlett J. Courier,	-	$8 00
" 4th premium to Wm. Moody, jun.	-	$6 00

All which is submitted by order of the Committee.

JOSEPH KITTREDGE, *Chairman.*

ON PLOUGHING—SINGLE TEAMS.

The Committee consisting of Paul Kent, Thomas Payson, William Thurlow, Tristam Little, and John Northend, to whom was assigned the ploughing match of one yoke of Oxen, report—

That the land to be ploughed was divided into lots of about one-fourth of an acre each.

There were eight teams entered for premium, but one withdrew.

The work was done well, equal if not superior to any previous year. The ploughing was to be not less than five inches in depth. Under these regulations the ploughing commenced.

No. 1. Adams Knight's team, Frederick Knight ploughman, 30 furrows, 1 hour and 24 minutes.

No. 2. Moses French's team, Moses French ploughman, 26 furrows, 1 hour and 46 minutes.

No. 3. Samuel Longfellow's team, Samuel Longfellow ploughman, 29 furrows, 1 hour and 41 minutes.

No. 4. Daniel Adams, 3d. Joseph Daniel teamster, 26 furrows, 1 hour and 21 minutes.

No. 5. Richard Jaques's team, Richard Jaques, jun. ploughman, 23 furrows, 1 hour and 26 minutes.

No. 6. John Noyes's team, John Noyes ploughman, 29 furrows, 1 hour and 12 minutes.

No. 7. Pike Noyes's team, Pike Noyes ploughman, 28 furrows, 1 hour and 14 minutes.

The Committee were unanimously of opinion that the premiums be awarded in the following manner.

1st premium to Richard Jaques, -	$10 00
2d premium to Daniel Adams, 3d. -	$8 00
3d premium to Pike Noyes, - -	$6 00
4th premium to Adams Knight, -	$4 00

Which is respectfully submitted.

Per order, PAUL KENT, *for the Committee.*

No. VIII. ON ANIMALS—BULLS.

The Committee appointed to examine and report upon Bulls exhibited at the cattle show this day, ask leave to report—

There were presented for premium nine Bulls, most of them indicating thrift and care.

Your Committee, after due consideration, award

To Col. Jesse Putnam, of Danvers, for a Bull two years and five months and one day old, the 1st premium, of $15 00

Your Committee award

To Gideon H. Currier, of Newbury, for a Bull two years old last April, the 2d premium, of - - $10 00

Your Committee also award

To Joseph Day, of Bradford, for a Bull 15 months and 7 days old, the 3d premium, of - - - - $5 00

There were six other Bulls entered for premiums of a common and ordinary quality.

One by Capt. Hector Coffin, two years old.

One by Moses Brown, eighteen months old.

One by Enoch & S. Follansbee, two years old.

One from the Indian Hill Farm, two years old last April.

There were two other entries made, but your Committee could not find the animals.

Your Committee are of the opinion, that our farmers generally are not particular enough in selecting the calves intended to be raised for bulls. If they would improve their stock, they must begin by selecting the most promising animals, and by affording them a generous keeping. For *producing milk*, and for their *power in the yoke*, taking into view the expense of their keeping, there are no animals superior to our own native breed of cattle ;—and it only requires proper attention in selecting, and proper care in rearing, to demonstrate this position.

We would not undervalue other breeds of cattle—we are glad to see them introduced, and hope that they will continue to be encouraged ;—but at the same time this is done, let us do the best we can, with our own. The field for improvement is broad enough for all to labor in, without any interference, or contention, as to their respective merits.

For the Committee.

SOLOMON LOW.

Newbury, Sept. 27, 1832.

SWINE.

The Committee on Swine, have attended to the duty assigned them, and report as follows.

The number of competitors, was six who exhibited animals (principally) of native breed.

The premiums have been awarded as follows—

For the best boar, the 1st premium of $5 00
To Parker M. Dole.

For the next best, the 2d premium of $3 00
To Thomas Emery.

For the best breeding Sow, the 1st premium of $5 00
To Philip R. Rogers.

For the next best, the 2d premium of $3 00
To Hector Coffin.

For the best weaned pigs, the 1st premium of $6 00
To Moses French.

For the next best, the 2d premium of $3 00
To Hector Coffin.

W. P. Endicott, *Per order.*

OXEN AND STEERS.

The Committee appointed to examine the Steers entered for premium, and Oxen exhibited, have attended to that service, and report—

The number of pairs of Steers entered was quite large; there were five pairs of three years old, and five pair of two years old. No premiums were offered on working oxen.

The Committee have awarded

To Israel Bartlet of Newbury, the 1st premium of ten dollars, for his steers of three years old.

To Amos M. Follansbee of West Newbury, the 2d premium of five dollars, for his steers of three years old.

The Committee could not fully determine betweem a pair of steers of two years old, owned by Col. Moses Newell of West-

Newbury, and a pair of the same age, owned by Nathaniel S. Sawyer of Rowley, they would therefore award a premium of two dollars and fifty cents to each.

There were several pairs of Steers exhibited in addition to the abovementioned—among which were two pairs of two years old, belonging to Mr. John Northend of Newbury, that were very likely; also one pair of two years old and one pair of yearlings, belonging to Hector Coffin, Esq. of Newbury, with a statement of his method of rearing said steers, which the Committee think worthy of notice and imitation. Col. Wm. P. Endicott of Danvers, exhibited a very beautiful pair of three years old twin steers.

The Committee noticed an Ox exhibited by Joseph Mann of Salisbury, of Durham short-horn breed. Said Ox is five years old, weighs 2420 lbs. and is a superior animal, and as there is no premium offered for animals of that description, the committee recommend a gratuity to Mr. Mann of five dollars.

SILAS MOODY, *Chairman.*

Newbury, Sept. 27, 1832.

HORSES.

The Committee on Horses have attended to the duty assigned them, and ask leave to report—

That the exhibition of these animals has been highly satisfactory and pleasing.

They regard the improvements in the breed of horses as an object of utility and importance.

Your Committee regret that no attempts for effecting this object have come within their knowledge.

No better mode suggests itself to your Committee than to encourage by liberal premiums every deserving effort towards this object. The rearing and feeding of these animals is indispensable to their growth and vigor—their value and beauty should excite more attention than has hitherto been given to the rearing of them in this county.

The Committee were unanimous in the opinion that the 1st

premium of $20, should be awarded for the iron gray Colt, three years old, of John O. W. Brown of Newbury, (Belville.)

They were of the opinion that the second premium of $15, should be awarded for the Bay Horse 4 years old of William Johnson Jr. of Andover.

They were of the opinion that the third premium of $10, should be awarded for the dark sorrel mare 4 years old of John B. Savory of Rowley.

The Committee also noticed a dark chestnut colt 3 years old, belonging to Amos M. Follansbee of West Newbury, and award a gratuity of $5.

And also a dark sorrel mare 4 years old, belonging to John Brown of Boxford, and award a gratuity of $5.

Also a dark chestnut colt 2 years old, belonging to Samuel Longfellow of Byfield, and award a gratuity of $3.

Also an iron gray colt 17 months old, belonging to Samuel Thurlow of Newbury, and award a gratuity of $3.

Also a Bay colt 16 months old, belonging to Hector Coffin Esq. of Newbury, and award a gratuity of $2.

Per Order. ANDREWS BREED.

September 27th, 1832.

No. IX. ON MULBERRY TREES.

The Committee on the cultivation of white mulberry trees for the making of silk, &c., submit the following report—

That three applications have been made for premiums offered by the Society, for the cultivation of white mulberry trees, to wit :—

Stephen Currier, of Methuen,
Asa A. Abbot, of Andover,
Thomas Bailey, of Amesbury.

The plantation of Mr. Currier is in two separate pieces of land, one containing about one acre and the other containing about half an acre of ground. The trees were transplanted

from the nursery in 1831, and were set out in rows eight feet apart, and the trees about five feet from each other in the rows. Between the rows Mr. Currier planted corn, potatoes and beans, that by the same process of keeping his plantation free of weeds, he might cultivate his corn and potatoes. In this manner he produced 7 bushels of corn, 135 bushels of potatoes, and 3 bushels of white beans, besides the potatoes, beans, and peas, which he used through the summer and fall for his family. The trees appeared thrifty and well.

Mr. Currier has fed about 15,000 silk worms the present season. They were hatched from the egg without any artificial heat on the 20th of June, and came to maturity in thirty-five days. In the early stages the worms were fed with the tenderest leaves, and in the fifth age they were fed with the largest leaves. Until the last age Mrs. Currier took the whole care of the worms. At this age she had the assistance of a girl two days and a half, and her husband two days, in pulling leaves and preparing branches for them to spin upon. Mrs. Currier also performed the work of the family, consisting of seven persons, and one half the time had the care of her dairy, the produce of six cows. The quantity of cocoons produced was 73 lb. 10 oz.

Mrs. Currier made an experiment of reeling the silk from several pounds of cocoons, and making it into sewing silk. She produced to your committee several ounces of sewing silk of her own manufacture, well colored, and which appeared exceedingly well made. We think she is entitled to much credit for her industry and her successful experiment in reeling, twisting and coloring her silk. The committee recommend that the first premium of twenty-five dollars be adjudged to Mr. Currier for his plantation of white mulberry trees and for the silk manufactured in his family.

The plantation of Asa A. Abbot was also examined by your committee, and they were much pleased with the thrifty and healthy appearance of the trees. The following statement was made by Mr. Abbot to your committee. "My nursery of white mulberry trees now consists of 1600 trees of three years growth. The first of May, 1830, I sowed about one-sixth of an

ounce of seed in eight rows thirty-nine feet in length and thirteen inches apart. The soil was moist and prepared in the same manner as for the reception of garden seeds, and the seed sown without any previous preparation.

"The soil was loosened with a hoe and kept clear of weeds through the summer. November 27th the trees were covered with fine boughs, which were removed early in the spring.

"In April, 1831, between the 14th and 23d, the trees were transplanted and set on 45 rods of ground, in rows five feet apart. The roots were trimmed and the tops cut down as far as they had been killed the preceding winter. The ground to which the trees were transplanted is level and moist. It was planted the preceding year with corn and potatoes, and after the crop was taken off it was laid in ridges in the fall. The ground was ploughed in the spring and furrowed deep by passing the plough twice in a furrow. The trees were then set in the furrows on an average 21 inches apart, the roots were covered by hand and the furrows levelled with a hoe. They were ploughed and hoed twice in June, once in July, and once in August. In June, 1832, they were ploughed and hoed twice, and trimmed immediately after hoeing. In August they were hoed once without ploughing."

Mrs. Abbot produced to your committee a small parcel of silk, which she had reeled from a few cocoons made by worms which she had reared. As a first experiment the committee thought favorably of it. They recommend that a premium of fifteen dollars be awarded to Mr. Abbot.

The nursery of Thomas Bailey was on a lot of land containing about 60 rods, and appeared uncommonly well. It appeared by the statement of Mr. Bailey, that in 1831 he sowed one ounce of seed which produced about 7000 trees, and at the time of examination had grown from 4 to 6 feet in height, many of them 7 feet, and one of them measured 8 feet in height.

In 1832 he sowed 3 ounces of seed, producing from 25,000 to 30,000 trees. They were planted in rows from 14 inches to 3 feet distance. The committee recommend a premium of ten dollars to Mr. Bailey.

Your committee would add some observations relative to the cultivation of mulberry trees, the rearing of silk worms and the reeling of silk, but the very excellent article upon these subjects, which is published in the last number of the transactions of this Society, renders it unnecessary. They would recommend a perusal of this article to those who are engaged in the culture of silk. EBENEZER MOSELEY, *per order.*

September 27, 1832.

STEPHEN CURRIER'S STATEMENT.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON THE CULTIVATION OF MULBERRY TREES, &C.

Gentlemen,—

I submit to your examination my plantation of white mulberry trees, situate in the town of Methuen. They were planted in the following manner—

In 1831, I set out my trees on an acre and a half of land.—One acre of the land had been planted with corn, for two years previous. The other half acre was grass land ploughed the fall previous. In the spring I ploughed the ground twice, and harrowed it well. The rows were set eight feet apart; and the plants in the rows about four feet apart. Between the rows, I planted corn, beans and potatoes. I raised on the ground 135 bushels of potatoes—7 bushels of corn—3 bushels of white beans ;—and all the peas and beans needed for family use through the season.

From the leaves of the young trees, I have fed the present season, 1832, fourteen thousand silk worms. They have produced seventy three pounds ten ounces of cocoons. The eggs were hatched, without artificial heat, about the 20th of June, and they came to maturity in about 35 days. The worms were fed with the tender leaves at first, and as they grew, with the larger leaves. Their litters were cleaned once an age, until the 5th age, and during the 5th age, three times. The worms were taken care of principally by Mrs. Currier, who required no as-

sistance, until the last age, when she had one girl two and a half days, and myself two days, in picking leaves, and setting up brush for the worms to spin on. At the same time Mrs. Currier took care of the worms, she did the work necessary in a family of seven persons, with a dairy of six cows half of the time. Mrs. Currier reeled a few pounds of the cocoons, and made them into sewing silk. We have found the process of cultivation simple and easy, and not difficult to be managed. We shall exhibit to you the cocoons and silk, as above stated.

Respectfully yours,

STEPHEN CURRIER.

Methuen, Sept. 26th, 1832.

ASA A. ABBOT'S STATEMENT.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON THE CULTIVATION OF MULBERRY TREES, &c.

Gentlemen,—

My nursery of white mulberry trees now consists of 1600 trees of three years growth.

The first of May 1830 I sowed about one sixth of an ounce of seed in eight rows thirty-nine feet in length and thirteen inches apart. The soil was moist and prepared in the same manner as for the reception of garden seeds and the seed sown without any previous preparation.

The soil was loosened with a hoe and kept clear of weeds through the summer; 27th of November the trees were covered with pine boughs, which were removed early in the spring.

In April, 1831, between the 14th and 23d, the trees were transplanted and set on 45 rods of ground in rows five feet apart. The roots were trimmed and the tops cut down as far as they had been killed the preceding winter. The ground to which the trees were transplanted is level and moist. It was planted the preceding year with corn and potatoes. After the crop was taken off it was laid in ridges in the fall. The ground was ploughed in the spring, and furrowed by passing the plough twice in a furrow. The trees were then set in the furrow on

an average 21 inches apart; the roots were covered by hand, and the furrows levelled with a hoe. They were ploughed and hoed twice in June, once in July, once in August. In June, 1832, they were ploughed and hoed twice, and trimmed immediately after hoeing; In August they were hoed once without ploughing. Respectfully yours, Asa A. Abbot.

THOMAS BAILEY'S STATEMENT.

TO THE COMMITTEE OF THE ESSEX AGRICULTURAL SOCIETY ON THE CULTIVATION OF MULBERRY TREES.

Gentlemen—I submit for your consideration the following account of a nursery of white mulberry trees, which were produced from seed sown by me on a lot of land situated in Amesbury, containing about 60 rods. 1 oz. seed sowed 1831, produced about 700 trees, quite thrifty, and grown from 4 to 6 feet in height, many of them 7 feet; one in particular, which I measured, is 8 feet high. 3 oz. seed sowed 1832, produced from 25,000 to 30,000 trees. The above were planted in rows or drills from 14 inches to 3 feet distance.

Not knowing till lately of any premiums being offered to encourage the cultivation of the mulberry tree, I am unable to give a particular account of labor expended in said nursery: but it is considerable, and the raising of the mulberry tree, from the little experience I have had requires much care and attention.

Thomas Bailey.

Amesbury, Sept. 27, 1832.

No. X. ON CULTIVATION OF RYE.

JOHN KEELY'S STATEMENT.

TO THE TRUSTEES OF THE ESSEX AGRICULTURAL SOCIETY.

Gentlemen—

Having for some years past been more than commonly successful in raising large crops of winter rye by a process of cultivation which I believe is entirely new; I have been induced

by the suggestion of some gentlemen whose judgment I very much respect, to submit for your consideration a statement of the mode of culture with the produce. And that the success of the experiment this season, may not appear to be altogether accidental, it will perhaps be as well to communicate the result of the process for the three or four previous years.

The land on which the experiment has been conducted is situated on the Merrimack, about a mile and a half east of Haverhill bridge; and came into possession of my father in 1827. The soil is a sand, approaching to loam as it recedes from the river. Perhaps the term *plain land* (by which it usually passes) will better convey an idea of the quality of the soil. It is altogether too light for grass. The crops we find most profitable to cultivate on it are, winter rye, Indian corn, potatoes and to some extent turnips. Oats might probably be raised to advantage were it not that the land is completely filled with the weed commonly called charlick, which renders it entirely unfit for any spring crop, excepting such as can be hoed. The crops of rye, on the neighboring soil of the same nature, vary I believe from seven or eight, to twelve or thirteen bushels per acre, according to the cultivation, and their approximation to the river. We usually raise on land from thirteen to thirty bushels of Indian corn per acre. Potatoes are very good in quality, but the quantity is quite small; not sufficient to be profitable were it not that the land is very easily cultivated.

In the summer of 1827, we sowed three bushels of winter rye near the river, on about two acres of land, which produced twenty-eight bushels.

In 1828, we sowed four bushels on four acres of land running the whole extent of the plain from the river. This piece was sowed in the spring with oats; but they were completely smothered with charlick, and about the middle of June, the whole crop was mowed to prevent the charlick seeding. By about the middle of August, a second crop of charlick having covered the land, it was ploughed very carefully, in order completely to bury the charlick; and then suffered to remain until the 15th of September when we began sowing the rye in the following manner.

A strip of land about twelve yards wide was ploughed very evenly, to prevent deep gutters between the furrows, and the seed immediately sown upon the furrow and harrowed in. Then another strip of the same width, and so on until the whole was finished. We found the oat stubble and charlick entirely rotted, and the land appeared as if it had been well manured, though none had been applied to this part, since it had been in our possession. The rye sprung very quick and vigorously, having evidently derived great benefit from being sown and sprouted before the moisture supplied by the decaying vegetable matter in the soil had evaporated to any considerable extent. This crop produced 133 bushels.

In 1829, the charlick was suffered to grow on the land appropriated to rye, until it had attained its growth and was in full blossom. The land was then ploughed very carefully and the charlick completely covered in. In a short time a second crop appeared more vigorous than the first. This also was allowed to attain its growth, and then ploughed in as before. A third crop soon appeared, which of course was destroyed when the land was again ploughed for sowing about the middle of Septemer. This piece of land was a parallel strip running from the river, and containing two acres. Two bushels of rye were sowed. The crop presented a remarkably promising appearance, and yielded seventy-four and a half bushels.

In 1830, the land appropriated to rye included nearly all the lighter part of the soil, and owing to a pressure of business was not attended to as we could have wished. It was ploughed in the early part of the summer. But harrowing to destroy the weeds was substituted for the second ploughing. This, and the unusual blight which affected all the grain in this part of the country, led us to anticipate a small crop. It yielded however fifteen bushels to the acre.

The land on which the crop of rye was raised the present season, had for the three or four previous years been planted with Indian corn. And owing to the extent of our tillage land, we have not been able to apply more than four or five loads of manure to the acre this season. The charlick was suffered to attain

its growth as usual; and on the 18th and 19th of June it was carefully ploughed in. The second crop was ploughed in on the 6th and 7th of August. On the 14th and 15th of September it was sowed in the usual manner, namely, a small strip of land was ploughed and the seed sown immediately upon the furrow, and then harrowed in. Then another strip of land was ploughed, and so on until the whole was completed. One bushel per acre was sowed as usual. The seed was originally obtained from a farmer in this vicinity, and I suppose is similar to that which is generally used. We have never prepared our seed in any manner, but have directed our attention solely to the preparation of the land. And to this we attribute our success. Owing to the unusual severity of the winter, the crop was considerably winter killed, but recovered very soon in the spring, excepting in the midfurrows. There, as the land lies very level, the water settled and so completely destroyed the rye that they continued bare the whole season. This would of course cause some diminution in the crop; perhaps a bushel or two. The rye was reaped at the usual season, and, as the weather was favorable, immediately put into the barn. The land contained one acre and thirteen rods and yielded *forty-six bushels and three pecks. A remarkably fine sample.*

In entering a claim for your premium, I would ask your attention particularly to the process of cultivation. It is I believe entirely new; and capable of general application.

Sowing the seed immediately after the plough, we consider very advantageous to the crop. The soil being then moist, causes the seed to spring immediately, and gives a forwardness and vigor to the plants which they ever after retain.

The process of ploughing in *three* crops of weeds before the seed is sown, very much enriches the soil. It would be altogether unnecessary to attempt to refute the notion, that by such a process nothing more is applied to the soil, than was before derived from it. If one could not discover by the light which Chemistry has shed upon the subject of Agriculture, sufficient *reasons* for the contrary conclusion, observation, one would think, would be sufficient to convince any intelligent man of the fact.

And here I would suggest that I do not consider the experiment as we have conducted it, quite complete. To render it more so, in the first place, in ploughing in the weeds, I would not turn a furrow after the dew had evaporated. I have no doubt but that a large portion of that fertilizing quality in the soil, which (during the summer months) is continually exhaled from the earth, is by the dew brought again within our reach, and it would be wise to avail ourselves of the opportunity of again burying it in the soil. And in the second place, I would by all means use a heavy roll after each ploughing. It would fill all the cavities left by the plough, and by pressing the soil more closely to the weeds, at once hasten their decomposition and very much retard the evaporation from the soil.

But the land is not only very much enriched by this process. There is I conceive no method by which it can be so effectually cleaned. Three times during the season, a fresh surface is presented to the atmosphere, and each time, as the decaying vegetable matter increases in the soil, so is the exciting cause augmented to make a more vigorous effort. We have in this manner gone over nearly all our land which is infested with charlick, and the diminution of the weeds is quite sufficient to warrant the expectation, that in a few years it may be comparatively eradicated.

Very respectfully.

JOHN KEELY.

Haverhill, Sept. 22, 1832.

The undersigned having assisted in measuring the rye, an account of which is given above, hereby certify that the quantity is as there stated, namely, forty-six bushels and three pecks.

JOHN KEELY,
THOMAS E. KEELY,
SAMUEL THOMPSON.

HAVERHILL, AUG. 1, 1832. I have this day measured a lot of land belonging to Mr. Keely, on which is a crop of rye, and find it to contain one acre and thirteen rods.

C. WHITE, *Surveyor.*

At a Meeting of the Trustees of the Essex Agricultural Society, January 1, 1833. The foregoing statement having been read and examined,

Voted, That the first premium offered for the cultivation of rye, be awarded to Mr. Keely.

Attest. J. W. Proctor, *Secretary.*

THE CULTURE OF INDIAN CORN.

The season of 1832 was so extraordinary as to deserve particular notice. The winter of 1831 and 1832 was remarkable for the intensity of the cold and the great quantity of snow upon the ground. During the month of December, 1831, the cold was uninterrupted and after a slight relaxation in January, it returned and continued with trifling intermission until late in March. March itself was a cold, boisterous month; and the oldest men living do not remember a more backward spring. Planting was necessarily postponed to a very late period; much of the seed was rotted, so that in many cases the planting of Indian Corn was several times repeated on the same ground; and much was abandoned in despair. The farmer's prospects were never more discouraging. The cold continued until very late in the season. On the 25th of May snow fell to the depth of two inches in the neighborhood of Boston. The summer might be considered as a cold summer, as there was no extraordinary intensity and no long continuance of heat. On the 12th and 13th September, a severe frost occurred, which destroyed much of the Indian corn, which was then in the milk. After this followed a continuance of mild and pleasant weather until late in the autumn.

It is on many accounts important to the agricultural portion of the community to retain the recollection of this memorable season, and to note its result in gratitude to that kind Providence which appointed seed time and harvest, and in this instance disappointed our fears and caused the earth to yield its supplies for man and beast. The crops of rye were much winter killed and very short. Oats and barley were abundant. Wheat in

those parts of the country favorable to its cultivation, yielded a copious return; and produced abundantly in many places, where from its repeated failures, it had almost ceased to be cultivated. Potatoes were a fair crop, and of excellent quality; and Indian corn, where it survived the frosts of the 12th and 13th of September, yielded more than a medium produce. It is a remarkable fact, within the writer's knowledge, that a good deal of corn planted as late as the 13th, 14th, and even 21st of June, perfectly ripened and gave a full return.

During a considerable part of the season, a greater despondency prevailed with the farmers than we remember since the memorable years of 1812 and 1816, when the Indian corn crop, by the coldness of the season and the early frosts, failed almost entirely throughout New England. The farmers then felt by severe experience, and this year, under the excitement of their fears, began to calculate, the great value of this crop. Indeed it can hardly be over estimated, if we consider it in reference to the amount it furnishes immediately to human sustenance; its connexion with the great products of our farms, our poultry, mutton, pork, and beef; and the aid which it contributes in the form of fodder and grain to the support of our domestic animals.

This ought to excite renewed attention to the cultivation of this crop, which is certainly susceptible among us of great improvement. The importance of the subject will be a sufficient apology for dwelling upon it at some length, and at the hazard of the repetition of some former remarks.

The average amount of this crop throughout New England does not exceed thirty bushels to the acre. In a report formerly made to the Agricultural Society of Massachusetts, the Dunstable Society estimated it at from 15 to 25 bushels; the Newbury Society at 40 bushels; the Vassalboro' Society at 30 to 40 bushels; the Danvers Society at from 25 to 40 bushels; the West Springfield, at from 15 to 40 bushels. Since these reports were made, the cultivation of this crop has in many places been considerably improved; and in some instances very large returns have been obtained; yet from the best observation we have been able to make, throughout the New England states,

after a just allowance for the too common extravagance of almost all conjectural estimates, we are convinced that thirty bushels to the acre is a fair average of this crop among us.

Now, small as this return is, we believe, where the fodder is well husbanded and applied, that it is better than any crop we are accustomed to raise and upon which we bestow no more proportional expense of manure and labor. Land yielding about 30 bushels of corn to the acre, will, under the same manuring and cultivation, not be likely to yield more than 140 bushels of potatoes to the acre, nor more than one ton of English hay. These we admit are small returns; but we have been too often deceived by over estimates and too familiar with the actual weighing and measuring of crops to indulge in any of those excessive calculations by which men often impose on themselves. Now, without proceeding to any more minuteness of detail, as we believe the fodder from an acre of Indian corn, yielding 30 bushels to the acre, where well husbanded and applied, to be fully equal to two thirds of a ton of English hay; and as we know, that no crop returns so much manure to the ground, where the offal is taken due care of; and farther, as we are satisfied that Indian corn is no greater exhauster of the land than potatoes, whose return of vegetable offal to the ground can scarcely be considered as of any value, we are satisfied, that even at a yield of thirty bushels to the acre, Indian corn is one of the best crops that a farmer can raise, in proportion to the expense of cultivation.

But thirty bushels to an acre is a very small yield and one with which no enterprising farmer should be satisfied. Eighty, ninety, one hundred, one hundred and sixteen, one hundred and thirty-five bushels to the acre have been raised within this county. Now what has been done, can be done again. There is a great deal of land in the county adapted to the growth of Indian corn. If the expense of such cultivation is considerable, yet the increase of the crop is more than six times an equivalent for any increase of expense over that of the ordinary cultivation. The ploughing is the same; the harrowing and hoeing are not very different. The great increase of expense is in the manuring. Scarcely any crop, which can be cultivated will bear ex-

cessive manuring like Indian corn. But how are farmers to obtain this manure? We answer, by pressing the amount of your cultivation to the extent of your power; by the most careful gathering and husbandry of all the offal of every crop; by availing yourselves of every resource within your reach; the gathering of decayed leaves for litter; the washings of the roads, and the droppings of cattle on the highway, and in their places of rest and watering, near gates and under shades; by the collection of bog mud and the transportation of all sorts of refuse to the compost heap—ashes likewise in many cases have proved a most valuable manure for this crop; and one of the best farmers in the county, a strictly practical man, informed me that from his experience he had found leeched ashes a better manure for this crop than unleeched ashes, a fact if well founded of great importance. Plaster of Paris likewise deserves much more trial for this plant than it has yet received; and though the general impression is, that it is unavailing in the neighborhood of the sea, yet the interior of the county is so remote from marine exhalations that its efficacy may not be affected by them.

On a visit to an extensive farming establishment in the interior of New York, and certainly one of the best conducted farms which I have ever visited, the owner, who goes as largely into the cultivation of Indian corn as perhaps any man in the Eastern or Middle States, his produce often amounting to five thousand bushels a year, informed me that his crops for the last ten years had averaged more than one hundred bushels to the acre. His method of cultivation is peculiar; and the best test of its propriety and expediency is its success, he having within a few years more than trebled the amount of all his crops. He ploughs to the depth of about three or four inches, taking care to invert the sod completely; he then rolls it so as to exclude the air from the inverted sod; he then spreads about eight loads of manure to the acre, harrowing or ploughing it in to the depth of about an inch; and using the greatest care never to turn over or to break the inverted sod. His corn, which is a small eight rowed kind, is then planted in hills at the exact distance of 2 feet 8 inches each way, being careful always to use seed enough

to secure at least four healthy plants to a hill. It is occasionally, but not always, manured with a small quanttiy of gypsum or leeched ashes, and harrowed and hoed carefully; but never hilled. His crops are very abundant; and he attributes much of his success to his taking advantage of the fermentation and decay of the inverted sod, which from the quantity of vegetable matter contained in it affords much nutriment to the growing plant, as soon as its roots strike into it.

One of my next visits was to the farm of Jesse Buel, Esq. well known to the agricultural community, and whose establishment, though on a small scale, affords a pattern of neat, skilful, and intelligent husbandry, by few equalled, perhaps by none surpassed. In order to give some account of his successful cultivation of this crop, perhaps I cannot do better than to subjoin an extract of a letter received from him in the autumn of the last year, relating to this matter.

"For my gratification I to-day (Sept. 13th, 1832,) measured 33 feet square of my corn (4 rods) which I cut and set up separately with a view of ascertaining accurately the product. I measured from the centre of the space between the rows, and found that it gave 11 rows 15 hills in each—the rows being precisely 3 feet one way and about $2\frac{1}{2}$ feet the other. As I planted double the usual quantity of seed, and reduced the plants to four at the first hoeing, every hill I believe had its four stalks, and each stalk one ear at least, sometimes two, besides some on the suckers. Assuming an average of four ears to the hill and of one gill to the ear, the product would be more than 103 bushels per acre; but estimating, what I am confident is below the truth, that each hill will give six gills, instead of four, the product will be swelled to the incredible amount of more than 154 bushels to the acre. I do not mean to say that this will exhibit an average of the field or of an acre; but state it to show the practicability of raising this quantity. The difference made by close planting and having every hill with its four stalks, is far greater than would seem on a superficial view. I think the method of doubling the seed, that we may not only have a full complement but a selection of stalks, is the greatest improvement that has been

made in the culture of this crop. High manuring is necessary. I think my ears are as large as usual and many of them at husking will give two gills."

Such results as these are certainly extraordinary; but I cannot see why they may not be realized or at least very nearly approximated by the Essex farmers, much of whose land is favorable to the growth of Indian corn; and though, in many cases, hard to till, yet generally sure to make an ample return to the skilful, frugal and industrious cultivator.

In the cultivation of this crop, it is in the first place important to procure an early kind, as the best security against backward springs and early frosts. A field of corn in Lexington, planted on the 21st June, belonging to Mr. —— Chandler, yielded an ample crop and was perfectly ripened. The seed was of the twelve-rowed kind, much esteemed there, and easily procured. The kernel is small, but it yields as much to the acre, and weighs more by the bushel than the eight-rowed kind with a larger kernel. Now a kind of corn of this description, which will ripen in nine or ten weeks, in so unpropitious a season as the last, when there were few warm nights, which are generally considered most important to the forwarding of this crop, is certainly a great acquisition. It will be well to remark here that it is not only important to procure an early kind; but it will require particular attention to keep it so. Plants like animals have a constant tendency to become accommodated to the place and season in which they grow. Indian corn brought from the north to the south will become later and require a longer season for its ripening, unless particular care is taken in the selection of the earliest ripe ears for planting. Another consideration deserves attention to the selection of the seed for planting; which is, that high manuring has a tendency, by rendering the growth of a plant more luxuriant and succulent, to retard its ripening and so to lengthen its season.

We are satisfied from long observation and experiment, that the early planting of corn is generally and strongly to be recommended. The last season it is true formed an exception to this rule; but it was a rare case. Now a kind of corn, which by

early planting and consequently early ripening gives an opportunity of laying down the same ground seasonably with winter grain and clover, or which, where the first plantings fail, will afford us the prospect of a crop, when the vacancies are not supplied or the planting cannot take place, until after even the middle of June, certainly is a great object to farmers.

The kind of land best suited for this crop, I am satisfied, is a green sward, completely inverted, rolled, and so cultivated as not during the whole season to disturb or break the sod, which has been turned over. This is a point of great importance ; for the decomposition of the vegetable matter in the ground, which is effectually secured in this way, but entirely lost by the common mode of cultivation, will greatly contribute to the nutriment and vigor of the plant, supplying in fact an amount of manure greatly beyond what any conjectures would have made it, had not an exact experiment determined that in ordinary cases it may be rated over twelve tons of vegetable matter to an acre.

In the next place we protest against the practice of very deep ploughing for this crop ; and that of burying the manure deeply under the sod. The depth of ploughing may be in some measure regulated by the nature of the soil ; but three or four inches in sward land may be regarded as ample ; and not so much as this, where this would carry you below the vegetable mould. All circumstances considered, I am satisfied that it is most eligible to spread the manure upon the surface, ploughing it in with a very light plough or harrow ; and though something may be lost in this way by evaporation, yet not so much as by burying it under the sod ; and the land is left in much better condition for the next crops where the manure is thus spread, than where it is placed in the hill ; nor is the corn so likely to suffer from the drought and the saving of labor is considerable.

Of the after cultivation little need be said. Repeated stirring of the ground with a harrow or cultivator is advisable ; but care must be taken not to go so deep as to break the roots of the plant. Weeds cannot be too completely kept down ; but hilling or half hilling are utterly useless, either for the support of the corn or its productiveness ; and high hilling is absolutely pernicious.

The practice of topping the stalks is to be entirely disapproved. Very exact experiments have demonstrated that it cannot be done but at the expense of about one fifth of the crop ; and for this loss no advantage in the supposed improved condition of the fodder, can be any equivalent.

We come next to speak of the harvesting of the crop, and here I ask leave to detail partially my own experience. The common mode of topping the stalks, and afterwards gathering the corn in the field and leaving the husks and butts to be browsed by cattle is improvident and wasteful. The leaving it untopped until it is sufficiently ripe, and then cutting it up at the bottom, allowing it to finish the ripening in the shock, has sometimes with me been attended with success; in some cases however it has given me so much mouldy and soft corn as almost to induce me to abandon a method so much recommended by many intelligent farmers, and now since I have discovered, as I believe, the causes of my failure, most approved by my own judgment.

The last summer was such an extraordinarily cold summer that corn generally was three weeks behind its usual condition at this season, and fears were entertained that the crop would be entirely cut off. On the 9th of September there was a slight frost and on the 12th and 13th there were severe frosts. Corn was generally in the milk; and in many places much was killed. The fogs on the river, near to my residence, served as a protection to my crop. Under these threatening appearances, fearing the loss of my whole crop, if delayed, I determined to cut up the whole at the ground as soon as it should be slightly glazed, and the results and facts in relation to it, I took pains to record.

I was curious to determine whether corn in the milk, and not at all glazed would ripen if cut at this time. Three stalks with one ear on each were cut up in this condition and placed in as favorable a situation as possible for sun and air. They ripened perfectly and to appearance became as fair and hard and heavy as any ; but the experiment would be a rash one with a whole field, where as favorable an opportunity for curing it could not be obtained.

I began cutting up my corn on the 14th September, after hav-

ing previously cut out the suckers and barren stalks. The field, which I took first, was one in which the corn appeared dead; but this was occasioned by the rust, not by the frosts. This corn was cut; and without being laid upon the ground, several hills were brought together, and being spread at bottom, were tied by a single band at the top. Much of this corn upon husking appeared of a pale yellow; and a good deal of it was soft and mouldy. The stooks did not stand firmly; and were frequently overturned by the wind. Perhaps the centre hill, around which the others were gathered, ought not to have been cut until the time of carrying in the corn, as is practised by some persons. The shocks likewise being large and tied at the end were loaded on the cart with difficulty. We attempted to remedy this by dividing the shock, and tying it with straw in moderately sized bundles before we removed it; but this greatly increased the labor. Upon the whole we entirely disapproved this manner of shocking and tying them.

Another field, where the corn was slightly glazed and the stalks very green, was cut, tied in small bundles above the ears, and put in small shocks. This corn came out better than the former, but not so well as could be desired. We concluded that it was cut too early and husked too soon, not having remained long enough in the shock.

Two other fields were necessarily left to a later period, after the corn had become fully glazed, that is in general every kernel on an ear well touched, though the stalks were still green and succulent. It was tied very near the top in small bundles, put up in small shocks, and spread at bottom so as to give free access to the air. This corn came out at husking perfectly bright and sound; with less refuse than ordinary; and the fodder was succulent and of the very best quality.

The trouble of husking corn gathered in this way though somewhat greater than merely husking it in the field on the stalk or after it has been gathered and the ears only carried into the barn, was not upon the whole a difficult job; and the whole labor of harvesting in this way was not so great as, in the usual way, to

top the stalks and cure them, and then cut the butts and carry them into the barn and husk the corn from the butts.

I have already extended this paper to an inordinate length. I shall therefore hasten to relieve my reader by a brief recapitulation of some of the positions here taken, and a mere suggestion of some other important results in relation to this crop, in which experience and observation have fully confirmed me.

The extended cultivation of Indian corn ought to be urged upon every farmer as one of the best crops to which his attention can be directed. At thirty bushels to the acre it is better than almost any crop, which can be raised with the same expense of manure and labor. Thirty bushels however is not half a crop; and since in repeated instances more than one hundred bushels to the acre have been obtained, and in one case, as is established by unquestionable evidence one hundred and seventy, the enterprising and intelligent farmers of Essex county ought not to be satisfied until they have at least doubled, not to say trebled their ordinary crops.

It is not a remarkable exhauster of the land. This is proved by the fact of its having been planted year after year for ten and twelve years in succession, on the same land, without any great diminution of the product. We do not however recommend this husbandry. It requires rich manuring; and no crop will better pay for it. Almost any manure is good and should be kept as near the surface as it can be done and yet be intermixed with the soil. Ashes, leeched or unleeched, and in places remote from the sea, plaster of Paris, are powerful stimulants to this crop, and to be applied immediately after planting or before the first hoeing. Green sward is the most suitable soil; deep ploughing is not beneficial; and the sod should be completely inverted and cultivated through the season without being broken or reverted, so that the plant may have the advantage of the decomposition of all the vegetable matter contained in it. It is better for the land in reference to succeeding crops that the manure should be spread evenly than deposited in the hill; and better for the plant itself in case of drought; besides being a great saving of labor. Planting in hills is of easier cultivation than in

drills; and where the land is in rich condition very close planting may be allowed and is necessary to obtaining a large crop. Straight lines and planting by rule is matter of good appearance, convenience, saving of labor, and important for the free circulation and admission of sun and air. Abundant seeding, so as to secure not only a complement and a choice of plants, is to be followed, and four good plants in a hill throughout the field is to be desired.

The crop cannot be kept too clear from weeds. A light harrow, or a cultivater with two or three skimming shares attached to it besides the teeth, which will cut off the weeds and loosen the ground without breaking the sod, is the best instrument for going among the crop. Ploughing among it, after it has attained much size, is likely to injure the spreading roots of the plant. Hilling and half hilling are only a waste of labor and an injury to the crop. The surface should be kept level.

Topping the stalks is a serious injury to the crop and ought to be forever discarded. The best mode of harvesting is by cutting after the corn is glazed; tying in small bundles near the top, and putting it in small shocks upon the ploughed land and not upon the grass ground. This last is a point of great importance. An intelligent farmer, who has been in the habit for ten years of harvesting his corn in this way, cautioned me by no means to shock it upon the grass ground, as the grass would exclude the access of the air to the bottom of the shocks, and the stalks and the corn would become damp and mouldy. This obvious, but before unthought-of circumstance, explained my former ill success in some cases, to which I have alluded; as in those cases, as I wished to plough the corn ground, I remembered shocking the corn on the grass ground by the side of the field, where the rowen was very luxuriant.

I have only to add that the smaller kinds of corn are better for our cultivation than the larger. This kind bears close planting. The yield is thus made equal in the number of bushels; and a bushel of the small size is heavier than one of the large kind. The fodder is more easily cured and more readily consumed by the cattle.

The farmers of the West, on their rich alluvions, with little labor and with no manuring we are told, easily produce their sixty, and eighty bushels to the acre. By abundant manuring and diligent labor and skill we may approximate such abundant crops. In this part of the process the odds are, it is true, against us; we must console ourselves under these disadvantages, however, with knowing that the crop with us after it is harvested is ordinarily worth in cash three times, four times and often eight times as much as theirs; and here I believe we shall find a reasonable not to say an ample compensation for our toil. Lastly, let no part of the produce of this plant be wasted. The grain itself is, it is believed, the most nutritious of all substances for man and beast. What will not serve for fodder will serve for litter. No part which rises above the ground should be left in the field. Thus will it contribute in a larger proportion than any other plant to return to the soil that of which it exhausts it; and thus in the cultivation upon the most improved plan of this noble and beneficent plant to the extent of their power, the Essex farmers will find that power continually increased; they will recognize the distinguishing goodness of divine providence in a soil and climate adapted to this valuable product; and lay the foundation of improving and successful husbandry.

My good friends, the farmers of Essex County, will pardon what they may deem the extravagant but honest zeal of an old associate; and gratefully recognizing the ties, which formerly connected us, I beg to assure them of my unabated interest in the great and useful objects and the particular success and honor of their patriotic Society.

HENRY COLMAN.

Meadowbanks, Deerfield, Mass. March 5, 1833.

DR. JEREMIAH SPOFFORD ON GARDENING.

Perhaps I cannot discharge my duty as a member and officer of the Society, better than by calling their attention to the sub-

ject of gardening. Within my observation this branch of agriculture seems to be much neglected: and by no class more so than by our large farmers.

Their numerous calls for labor upon other parts of their farms in the season for gardening is doubtless the principal cause, but still there must be a defect of taste, and want of a just estimate of its importance, or it could not be so much neglected.

I am not sure how the account might balance if every hour's labor was hired, and the amount of income estimated, but when we consider its adaptedness to employ hours of leisure in the morning and evening, and the luxuries it affords, in addition to mere necessaries which are not otherwise attainable in the country, its utility admits not of a doubt.

A quarter of an acre allotted to the purpose, in a convenient situation, and properly cultivated with the great variety of roots and vegetables which the present improved state of horticulture affords, will yield to a family not only a luxurious but a wholesome and profitable addition to half of the meals in the year.

A farmer should be ashamed to see no vegetables upon his table but potatoes, while land enough lies barren near his door, to produce beets, carrots, parsnips, onions, turnips, cabbage, squashes, and cucumbers, to supply all the tables in his neighborhood; and he may also well afford to put into the ground a few of the seeds of beautiful herbs and flowers; for almost without further labor, nature in her prolific luxuriance, will return a profusion of her choicest productions, both for use and ornament; and here by the way the poppy, though often rooted up and thrown away as a useless weed, is entitled to our special care. It should be gathered when in full bloom, both green leaves and flowers, and carefully dried in the shade. It is a most useful medicine, to assuage pain, and more convenient for external application than the expensive drug which is extracted from it, and imported from foreign countries.

Much discussion has been had among the scientific farmers as to the best modes of raising fruit trees, and no doubt to great advantage; but much more need be said, to induce people to make constant use of the knowledge they already have.

Every farmer or gardener should make it his business every year to plant and cultivate fruit trees. How many rich corners and road-sides of his land, remain vacant, where if the seeds or plants were once placed, the teeming earth, would soon load his table with apples, pears, peaches, plumbs and grapes, each of which serves not only as a dessert to garnish other food, but is *food itself.* The sweet and pleasant varieties of these fruits when well ripened afford a rich and wholesome aliment to the human stomach, although much has been said during the last year against their use, on account of cholera; (and it is believed that much more was said than was true,) yet nature has not changed, and delicious fruits will be *useful* and *used* as long as people live by eating and drinking.

In none of these fruits are we more deficient than in the culture of grapes, and none are more easily raised, as will appear by the following extract of a letter from my friend H. G. Spofford, Esq. of Lansingburg, N. Y. In a letter of May, 1830, he says "I have about one hundred bearing vines, none more than four years old, they cover about one third of my garden of about one third of an acre. They are principally on arbors and over the walks around the buildings. I could have sold my fruit last year for two hundred dollars. I ripen different varieties—and had plenty to eat last year from the 10th of August to the middle of November, fresh plucked from the vines. I select from the woods far and near the most vigorous growths of the indigenous grape, prune and train carefully, selecting from all, the best varieties. I have some of a richness of taste, size and quality not exceeded by any I ever saw."

I visited this garden in June 1832, and witnessed the success of his grape culture, and have now only to lament that death (by cholera) has closed his useful experiments and to wish that thousands may imitate his example.

Apple trees which I set out in 1821, now yield me excellent fruit, and are in good bearing order—and I have enjoyed the fruit of two or three generations of peach trees since I occupied my present stand in 1817. I know a man in one of our towns, who is getting double the value from the garden and

home lot of two acres to what his predecessor obtained from the whole farm of eighty acres.

Doubtless a great deal might be said in favor of the different modes of cultivating every one of these productions, but I shall leave these minutiæ to other pens, and shall only urge every person who has land, from four square rods, to one hundred acres, to have his garden, to manure well, dig his ground light, put in a good variety of seeds, and keep down the weeds, and he will reap an ample reward. Other questions may involve the quantity and quality of fruits, but so far as I have stated involves the difference between something and nothing.

I consider gardening as a profitable branch of agriculture, a most innocent and rational amusement, an ornament to every household establishment and an important part of the education of every family.

JEREMIAH SPOFFORD.

J. W. Proctor, Secretary of the Essex Ag. Society.

UPON EXACT AND EXPERIMENTAL AGRICULTURE.

My friends, the Farmers of Essex County, will not be offended if I presume to urge them upon one or two points, which I deem of great importance to their agricultural improvements; and they will pardon a freedom and earnestness, which they know spring wholly from an honest pride in the honor and a strong desire for the success of their intelligent and enterprising association. Though removed from their immediate vicinity, I am not the less interested in whatever concerns a county, endeared as the residence of my remote ancestors, who among the earliest emigrants made it their resting place, and, with their descendants for years, participated in its privileges and blessings.

The first matter which I suggest to you is exactness in your agriculture. The neglect of this is almost universal, and to its great disgrace may be said to be characteristical of the farming profession. In my intimate intercourse with farmers for years,

nothing has been more remarkable, and nothing in many cases more mortifying and provoking, than this want of exactness. They measure nothing; they weigh nothing. It is all guess work with them in every thing. Ask them how much land they till or mow?---they do not know. How much corn, rye, oats, barley, how many potatoes, they raised?—they did not measure them. How much hay they mowed?—they guess about so many loads. How much their corn or their potatoes yielded?—why, they judged about so and so; but this judgment is altogether the merest guess work. How much manure they put upon an acre?—why, they mean to put on, commonly, for there are always qualifications enough to save their veracity, about six, or eight, or ten loads, as the case may be; but what they call a load is with themselves, and must be with others, matter of pure conjecture, How much seed they sow to an acre?—why, as near as they can guess, about so much. How much will a favorite cow yield?—why, she gives over a pailful; but what is the size of the pail, whether six, or eight, or ten quarts, or whether wine quarts or beer quarts, which makes a difference of at least one fifth; or how much over, whether one quart or four quarts, are points, which it never occurs to them are important to be defined, or at least pretty exactly approximated, before they presume to demand the confidence of others, or indeed to place confidence themselves in their own statements.

Now I submit to you, my brother farmers, whether this is not an unvarnished statement of facts. Ought it to be so? Is such looseness or neglect admissible in any other of the business professions?

But what, you will ask, is the advantage of such exactness? We answer, very great. There is a satisfaction in knowing what we do. If we do not, in fact, do so well as we imagine, let us not go on deceiving ourselves, but ascertain the occasions of the failure. If we in fact do better than we imagine, let us enjoy the pleasure of conscious improvement, and let it furnish a stimulus to greater efforts.

Exactness is important in the next place, in order that a man

should compare the value of his crops with the expenses of cultivation; and of each crop with its particular expense; that he may determine how far he is a gainer or a loser by his operations; and in what respects one crop may have the advantage over another; that he may determine which will best repay his care and labor. But he can never do this, and he is liable to the grossest mistakes, both in judgment and practice, without exact observation and measurement.

Exactness is important in the next place to the proper disposal of his crops. How can a farmer well calculate what he shall do with his crops, unless he first ascertains what he has? If he overrates them, he is liable to overstock his farm, and either be compelled to pinch his cattle, by which in the end he is sure to lose, or to purchase fodder, which few men can afford to do; or if he underrates them, not keep stock enough, and with the feeling of abundance be very likely to use his produce prodigally and wastefully, and so fail of the advantages within his reach. Exactness is in the next place important to a man's character and usefulness. Agricultural operations approach so nearly to what may be called a creative power, that no class of people are more liable to have the organ of self-esteem powerfully excited than the farmers. Few men therefore are more disposed to boast of what they have done, and especially how much they have done. Some of their statements are so extravagant that they are made at the expense of all respect either for their judgment, or knowledge, or veracity. The fact is, they do not mean to impose on others, but they deceive themselves. It is all guess work with them. The effects of such misstatements are often very bad; and equally pernicious whether the result of mistake or design. The inexperienced and confiding are led into gross miscalculations by them. Now, a respectable man ought to have so much regard to his own honor as that, when he makes a statement, he may be sure it is founded in strict truth; but of this he never can be sure, unless he is in the habit of exact calculation and measurement; and no certain progress can be made in the science of agriculture without this exactness. Agriculture must be consi-

dered as one of the exact sciences; and we shall never know whether our progress in it is forward or retrograde, until we have done with guessing. I have myself been so frequently and egregiously deceived by the misstatements of men, who certainly did not mean to deceive, that I have long since determined to believe no statement, which a man has not verified by actual and exact observation, and then I am as willing to give my confidence as any man. I could give some of the instances to which I refer, but some of my friends, who are accustomed to draw a long bow, would recognize the likeness, and I should be sorry to give them as much pain as they have occasioned me disappointment.

But, you say, it is troublesome to be so exact. The trouble is not great where the habit is once formed; and is very much more than compensated by the satisfaction experienced in doing it. Land can be measured with considerable correctness without the trouble of a surveyor's instruments. The time occupied in planting, cultivating and gathering a crop can easily be taken account of. The manure cart can be measured, and then an account kept of the number of loads carried out. The seed can easily be measured. All vegetable crops, all grain crops are very quickly measured. Hay can easily be estimated in the cock or in the load, and the number of loads determined; or the size of a mow ascertained, and the amount of hay contained in it very nearly calculated. Then again, the amount of food consumed by different animals for a week at a time, at different seasons, can be ascertained with very little trouble; and a calculation of the whole amount required for them be made from these premises. The quality of the milk of a cow can easily be decided by setting a portion of it for cream in a glass vessel, and comparing it with others in the same way and under the same circumstances; or the milk of a particular animal can be placed by itself for a period of time, and her actual produce determined. All dairy produce is easily ascertained. The debit and credit sides of your sheepfold too, and of your pig-sty, where let me tell you exactness is specially important, are easily kept. All these things ought to be done; and, I say

again, that the satisfaction and advantages of doing these would greatly overbalance the trouble and care. Ask an intelligent and enterprising manufacturer about his concerns. He can tell you, if he deserves that character, how much power of water he has, even to an inch; how many spindles he can carry; how many pounds of wool or cotton he can work up; how much fuel, how much oil, how much dye-stuff he requires; how many pouuds of wool or of cotton are needed to make a yard of cloth of a certain degree of firmness; how much of human labor he can employ to advantage; and at what rate exactly he can afford to sell his cloth in order to get a living profit. Now is there any reason in the world, why a farmer should not be, as far as possible, as exact and calculating in his concerns as the manufacturer? would he not find an equal advantage in it? and is not the want of this exactness and care one of the great reasons, why farmers in too many cases find their farms either an unprofitable or a losing concern, and in point of improvement are just where their fathers were a century ago? Keep a journal therefore; a diary. Keep an account of every field and every crop. Ascertain what it costs; what it comes to; what you have done for it, and what you do with it. Keep an account in some form with every domestic animal on your place. See whether they pay or how they can be made to pay for their living; whether you keep them for profit or pleasure. Do not be ashamed of mistakes and false judgments and miscalculations, unless you voluntarily run into them a second and a third time; because no human judgment is infallible, and the wisest are ever liable to err; and in the first place take care not to impose upon yourself, and in the next place, when you undertake to tell your neighbors what you have done, be sure you are able to speak the truth, the whole truth, and nothing but the truth.

Next to exactness is another matter intimately connected with it and of like importance to an improving agriculture, that of making experiments. You are too intelligent to indulge in the senseless clamor about agricultural experiments and experimental farmers. You know that in agriculture all knowledge is the result of experiment, and those are esteemed the best farmers,

who have made the most experiments, that is who have had the most experience and the longest practice. But perhaps you will say, let the rich make experiments, we have not the means. This is not so; and the farmers of moderate circumstances, and who work in their own fields, are the very persons to make the experiments, because they are better able to watch the result; and, as they cannot afford to lose and are most concerned to make their agriculture profitable, will feel the stronger interest in the progress of such experiments.

Now very extensive or expensive experiments are not what we recommend to farmers of small means; but small experiments are perfectly within their reach, and the instruction to be gained from them on a small scale may be equally valuable and decisive as from those on a large scale. The effect of lime upon your farms, or upon the different soils to be found in different parts of them; applied to corn or wheat, to potatoes, to grass; used in its air-slacked or unslacked state; how to be applied; when to be applied; all these are very important inquiries; and may be as easily ascertained by the use of a single cask, which may cost you a dollar, as by the use of fifty; and in any event you are certain that the lime is not wholly lost. So too with gypsum and ashes. Some of the most important points in regard to the application of these powerful manures remain to be settled by experiments. The result of such experiments may be of great importance to you; how they are to be applied; in what quantity, at what season; in what form, to what crops; under what circumstances they lose their efficacy; what kinds of plaster are to be chosen, the dark or the pink colored; how ashes are to be applied, whether leeched or unleeched; the comparative value of wood ashes, and of peat-ashes, with which your county abounds; all these important points can be determined only by experiment; and these experiments on such a scale as to decide them may be made by the smallest farmers and at almost no expense. So too as to the application of other manures; by the most simple experiments and without cost you can decide for yourselves the long mooted questions whether manures are best applied in a green or a rotten state, in the hill

or spread; and buried by the plough or scattered on the surface and barely covered with a harrow.

So likewise in regard to your crops:—you can as well ascertain on a quarter of an acre as on a quarter of a hundred, whether your soil will bear wheat or not, or by the application of lime or soaper's waste may or may not be made to bear it; whether the autumn or the spring wheat is best for you; whether your corn or potato crops were better planted in hills or in drills, and at what distances; whether your grass seed may better be sown in the fall or the spring, by itself or with other crops; and whether after a fair trial of the expense and value of the produce you would find it for your advantage to cultivate for the feeding of your stock large quantities of vegetables such as potatoes, carrots, or turnips; or to confine yourself to Indian corn and grass. These experiments would lead, if carefully conducted, to most valuable results, and for all practical purposes are as much within the power of the farmer in moderate as the farmer in affluent circumstances.

Next in regard to your domestic animals, do not be offended if I ask you, how many of you can tell me, how much hay and provender it requires ordinarily to keep a horse? how much a yoke of medium sized oxen, worked or not worked? how much a common milch cow? how much your yearling and two year old heifers and steers? and how near their labor, their produce, or their growth comes towards defraying their cost? These animals are kept at great expense beyond a question. The keeping of them a part of the year is not necessary for their labor to all of you, nor for their manure to some of you, who can procure this article in abundance either from the sea shore or from the neighboring livery stables. These then are most important points, which can only be decided by actual experiment; and such experiments require nothing more than a little trouble or attention, in measuring their food for a certain time. Very few of you would I believe be able to answer these questions with any thing like certainty. The amount of hay, for example, required for wintering a cow is estimated by different individuals at from one and a quarter tons to two tons and a quarter.

This, where hay is a cash article, is a very important difference; and though there will be differences in the size and appetites of different animals, yet most certainly we might more nearly than that approach the determination of the quantity. So too with respect to feeding of oxen and horses, not only as to quantity but the kinds of feed which may be most profitably applied, corn fodder, English hay, salt hay, corn, meal, oats, food cooked or uncooked, many queries arise, which can only be settled by experiments, careful experiments; and may be settled by experiments, which would cost nothing.

In regard likewise to the keeping of swine, every farmer who keeps one may soon settle for himself by actual experiment, the often discussed question of their profit or loss; and other points of equal importance relating to the kinds of food, which may be most profitably, if profitably at all, be given them.

These and such experiments as these I recommend most earnestly and most respectfully to the Essex farmers to make and to repeat and to report. The results of them and the faithful and exact communication of those results to the public through the Society will be of the greatest benefit both to individuals and to the community. In my opinion the Society could not better appropriate some portion of their funds than in the encouragement of such experiments by giving, where they are well conducted and fully detailed, whether successful or not, such pecuniary gratuities to those, who conduct them, as in their judgment they may merit; and as shall stimulate them to further inquiries, though such objects of premium are not, from the necessity of the case, previously promised in their publications.

Facts in agriculture are the instructors, which are most needed. The advances of the science have been necessarily slow; but who can doubt that there are yet many more truths to be discovered, other mysteries in nature to be solved; and much more light to break forth on a subject so essentially connected with human subsistence and comfort and the general welfare. He who assists to settle the most simple truth, and to solve the least of these and other controverted points, is to be deemed a public benefactor. He who brings but a single pebble

to the heap, may feel a just claim to his share in the honor of contributing to the substantial foundation on which the subsistence of animal life, the exercise of all intellectual and moral energy, and the improvements and comforts of human society primarily and mainly depend; agriculture, the mother of all the arts and the basis of all national prosperity.

HENRY COLMAN.

NOTE,

ON THE MANAGEMENT OF SILK WORMS.

In the essay on the management of silk worms, published in the Society's Transactions, 1831, page 86, and other manuals on the same subject, it is recommended that the air in the room in which silk worms are kept, should be purified by the use of the *Chloride of lime* or *Chloride of Soda.*

Since the publication of this direction, the Chloride of lime has been extensively used in our cities and large towns as a preventive of Cholera—and something more learned of its effects, than had been before known. It has been found when used freely, to drive all the rats and mice from cellars and houses, and we strongly suspect that it cannot be used safely where silk worms are kept. We are in some measure confirmed in this suspicion by the extensive mortality among silk worms kept in a room where it was used in this county the last season—and until these suspicions can be removed by experiments, we would recommend that the Chlorides be classed among the bad smells injurious to these tender insects.

An act for for the encouragement of the cultivation of silk, passed at the last session of the Legislature, offering bounties on this subject; which will be worthy the attention of those engaged in this business.

CORRECTIONS.

Mr. Perry's address, having been published without the supervision of the author—the reader is requested to make the following alterations—viz.

Page 11. 18th line, after the word *man*, insert *being*, and after the word *afloat*, insert *is*.

12. 3d line, after the word *picty*, *insert, in respect to an inheritance received from their father.*

5th line, change *them* to *thee*.—And erase, *This sentiment may be allowed to operate too powerfully.*

18. 23d line, instead of *customs*, read *improvements*.

19. 17th line, for *and*, read *are*.

18th line, after *mechanics*, insert *who*.

23d line, after *is*, read *also*.

STATEMENT OF THE SOCIETY'S FUNDS.

In the Savings Bank, Salem, with int. since Oct. 1829	$489 20
Thirty-nine Shares in Banks in Salem, estimated at par	3170 00
Ten Shares in Warren Bank, estimated at par	1000 00
Individual Notes - - - -	517 00
Cash in the Treasury - - - -	32 64
	$5208 84

ANDREW NICHOLS, *Treasurer.*

Danvers, March 1, 1833.

ESTIMATE OF THE SOCIETY'S EXPENSES, &c. FOR THE YEAR 1832.

Amount of premiums and gratuities awarded -	$480 00
Amount of bills for printing, &c. - -	185 50
Expenses paid incident to the Exhibition at Newbury	32 47
Subscription for the New England Farmer -	3 02
Stationary, Postage, and other incidental payments	7 75
Compensation voted the Secretary, by the Board of Trustees - - - - -	50 00
Amounting to - -	$767 49

Attest, JOHN W. PROCTOR, *Secretary.*

PREMIUMS,

OFFERED BY THE ESSEX AGRICULTURAL SOCIETY IN 1833.

I. MANAGEMENT OF FARMS.

☞ The same as the last year.

II. DAIRY.

1. For the best butter produced on any farm within the County from the 1st of June to the 9th of July inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibited, with a particular statement of the method of making and preserving the same, - seven dollars.

For the second best, - - - six dollars.

For the third best, - - - five dollars.

For the fourth best, - - - four dollars.

2. and 3. the same as the last year.

Note. It will be seen that *sixty dollars* is offered in premiums for the management of the Dairy. When it is considered how greatly the farmers will promote their own interests by attending to this subject, it is hoped that they will make an exhibition of the products of their Dairies worthy of the liberal premiums offered. No premiums will be awarded, unless the specimens exhibited are accompanied with full and satisfactory statements of the management of the Dairies in which the same were produced.

III. TURNING IN GREEN CROPS AS A MANURE.

☞ The same as the last year.

IV. FOREST TREES.

☞ The same as the last year.

V. CULTIVATION OF MULBERRY TREES, &c.

☞ The same as the last year.

VI. IRRIGATION.

☞ The same as last year.

VII. PLOUGHING.

☞ The same as the last year.

VIII. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

☞ The same as the last year.

IX. COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

☞ The same as the last year.

X. CIDER.

☞ The same as the last year.

XI. POTATOES.

☞ The same as the last year.

XII. IMPROVEMENT OF MEADOW LANDS.

For the best conducted experiment in improving by draining, gravelling or otherwise, not less than *one acre* of wet meadow or swamp land, with a detailed account of the culture, process, and benefits, - - - - twenty dollars.

For the second best, - - - ten dollars.

NOTE. Persons intending to claim these premiums must give notice to the Secretary, so that the Committee on Farms may have an opportunity to examine the same while the Crops are growing. These premiums will be continued.

XIII. CULTIVATION OF WHEAT AND RYE.

☞ The same as the last year.

XIV. ANIMALS TO BE PRODUCED AT THE EXHIBITION AT NEW ROWLEY, ON THURSDAY, SEPTEMBER 26, A. D. 1833.

☞ The same as last year—with an additional premium of three dollars for two year old steers.

XV. HORSES.

For the best horse raised in the County, not less than *three* nor more than *five* years old, - - ten dollars.
For the second best, - - eight dollars.
For the third best, - - - six dollars.
For the fourth best, - - four dollars.

XVI. DOMESTIC MANUFACTURES.

☞ The same as the last year.

GENERAL REMARKS.

All claims for premiums to be awarded on the day of Exhibition, must be entered with the Secretary of the Society on or before 9 o'clock, A. M. of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing, on or before the day of the Exhibition.

Claims for premiums on farms must be entered with the Secretary on or before the first day of June the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year*, will be considered as generously given to increase the funds of the Society.

Committees are instructed not to recommend the awarding gratuities for objects, that come within the rules prescribed for premiums on the same objects.

No animal, for which a premium has heretofore been awarded by the Society, will be entitled to have another premium awarded for it, unless it be of a higher order.

All persons intending to be competitors in the ploughing match must give information thereof to the Secretary or J. B. Savory, Esq. on or before the Monday preceding the day of Exhibition.

No person will be entitled to receive a premium, unless he complies with the condition on which the premiums are offered; and gives *notice as required* of his intention to claim the same.

In regard to all the subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality*.

By order of the Board of Trustees.

Attest, JOHN W. PROCTOR, *Secretary*.

January 1st, 1833.

NOTE.

A list of the names of the Members of the Society is not annexed to this pamphlet, for the reason, that the Secretary has not received any returns from the gentlemen to whom he wrote in Amesbury, Salisbury, Methuen, Rowley, Boxford, Wenham, Beverly, Marblehead, &c. requesting the proper corrections in regard to the members in those towns.

Such a List will probably be published, together with the Constitution of the Society, and the several Acts of the Legislature in relation to Agricultural Societies, as soon as it can be done correctly.

The next Exhibition by the Society, will be at *New Rowley*, on Thursday, September 26th, 1833.

J. W. PROCTOR.

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TRANSACTIONS

OF THE

ESSEX

AGRICULTURAL SOCIETY,

FOR

1833.

VOL. II.—NO. III.

PUBLISHED BY ORDER OF THE SOCIETY.

March — 1834.

Salem Gazette Press.

AN

ADDRESS

TO THE

ESSEX COUNTY

AGRICULTURAL SOCIETY,

AT

NEW-ROWLEY, SEPTEMBER 26, 1833.

AT THEIR

Annual Cattle Show.

BY JEREMIAH SPOFFORD.

Published by order of the Society.

SALEM:
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1834.

ADDRESS.

GENTLEMEN,

I consider myself happy, in the class of my fellow citizens that I am this day called upon to address. The character and pursuits of a New-England farmer, have always held an honorable place in my estimation. It was among them, and in their employment, that I spent those years of happy childhood, when every thing makes its deepest impressions. My earliest ideas of property, were derived from their possessions. To me houses and farms and cattle were wealth, and their owners nature's nobility. While money and notes, and stocks and merchandise, appeared fleeting and transient—there seemed something in the possession of *solid acres*, especially when these were *compact farms*, with their venerable mansions, descending from generation to generation, that elevated the possessor, and gave a dignity and character to his pursuits truly honorable and desirable.

Nor have these been merely the illusions of youth: they have followed me, and I have cherished them in my riper years.—And I view with gratitude that kind Providence, which cast my youth among that class of society. The labours of the field gave a value to my scanty library, and my few hours of study, of which, under almost any other circumstances I could have had no conception: and memory still loves to "hover o'er" those inestimable *Sabbaths*, when, after six days labour done, we found a day of *rest*, and assembled within these very walls,* to en-

* My native place.

joy it in social, solemn worship; nor can any one know the value of those Sabbaths, unless it be those who spend the week in patient labour, and assemble on the seventh as a sacred holiday, to greet the countenances of their friends, and pay their devotions to the most high God. Here then we met few except cultivators of the soil, prepared by their labours in the field to render their tribute of gratitude to Him who gives rain from heaven, and fruitful seasons, filling their hearts with food and gladness. Venerable fathers! who then bowed in this sacred temple! may your sons as patiently cultivate the soil you then possessed, and as devoutly worship here.

You will forgive this digression, when you look around the world, and see how closely connected are Christian morality and Agricultural prosperity,—and you will as soon expect to gather grapes from thorns, or figs from thistles, as to find a well cultivated farm under the superintendence of him who neither fears God, nor regards man.

Writers in all ages have been lavish in their praises of the important pursuits of the husbandman. The flowery *fields*, the bleating *herds*, the rural *cottage*, and the domestic *fireside*, have furnished poets and orators with their brightest images. But while they have thus been lavish of their panegyrics, few of them have descended from their elevations to cleave the sod, and nourish the plants, which produce all these beautiful images. But at the present day nothing is more common, than for men to quit our halls of legislation, our courts of justice, ships and merchandise, or the learned professions, to seek in agricultural pursuits for that tranquil enjoyment, that health of body and peace of mind, which they had sought in vain among the objects of towering ambition, the eager pursuits of wealth, and the jarring interests of a busy world.

Thirty years ago Cincinnatus had many admirers, but very few imitators; but now the Cincinnati of America may be found in every part of our land, and men whose names are well known to the politicians and literati of our country, may frequently be found aiding in the labours of the field. Their plans, and their pens, and their instruments of labour, co-operate in the same wise and be-

nevolent design—to multiply the fruits of the earth, the great mine of real wealth, and store-house of sustenance for man and beast.

That kind of fictitious consequence, which struts in ruffles and gloves, is fairly out of fashion. This may be styled the age of *utility;* and that man, as well as that machine, that is of no use, is very little valued; and the person who should in this age and nation, wear appendages or ornaments to show that he did nothing, would at the same time, in the estimation of an immense majority, be making himself ridiculous, and showing himself worth nothing. Riches to any amount now give no exemption from this universal law; but on the other hand, if a man has capital, he is considered under increased obligation to attend to business, and he is hardly excused when he provides business enough to ensure the industry of himself and household, but he is looked to for the plans and the capital which is to employ the hands, and furnish subsistence for his whole village or neighborhood.

This is among the most important improvements of the present age, and it has had a most salutary effect upon agriculture, that so many men of talent, property and education, have chosen this as the object of their pursuit, and the sphere of their industry. To the young and ambitious, the tiresome labour and the slow acquirements of the farmer, have often appeared repulsive; they have sought out some readier source of wealth, or what they might have considered a more genteel employment. They have often turned their backs upon advantageous settlements, and birthrights of inestimable value, to seek in distant lands, or foreign climes, for sources of gain and scenes of excitement and novelty. In a small proportion of instances these hopes have been realized; but in innumerable others, they have ended in sorrow, vexation and disappointment, and thousands of sighs of bitter anguish have risen from the bosom of the broad ocean, or echoed from foreign shores, when memory cast a "longing, lingering look" over the pleasant hills and fruitful fields of New-England.

The learned professions, merchandise, and manufactures, when selected by congenial minds, may have been wisely chosen, and

in many instances have led to happy results; but how many, even of those who have succeeded well in their plans, while enduring their tremendous responsibilities, their anxious cares, and their ruinous risks, have envied the farmer, who free from those cares, is tranquil by day, and finds repose and refreshment at night, in sound oblivious sleep; and who, independent of the breath of popularity, or the fortune of trade, depends for prosperperty only on himself and heaven.

Agriculture at the present day, instead of being a mean, servile employment, is now justly ranked as an important science; and the studies of the learned are now often directed to the most laudable employment of multiplying the fruits of the earth, and improving the quality of the fruits produced.

Chemistry no longer examines the material world in search of fictitious wealth. Philosophers have become convinced that in transmuting the simple elements into grain and fruit, fit for the nourishment of men and animals, they perform a much more useful service than they would have done had they succeeded in transmuting iron into gold, or lead into silver.

The long sought art of transmuting metals, though it might enrich the discoverer, would now be considered of questionable utility. The *art* of multiplying the fruits of the earth, has already spread the most solid comfort over this and other lands: and nearly banished want and famine from the civilized world; and yet so far is that art from having reached its maximum, that even in this State, though more thickly inhabited than any other portion of this Union, no doubt can reasonably remain but that three times its present inhabitants might be sustained on our own soil.

When our soil shall be thoroughly analyzed, and every acre applied to its appropriate use, and when the increase of population, or a diminished supply from abroad, shall turn our attention to our own resources, our now naked plains will be loaded with luxuriant vegetation, and our hills shall wave with the golden harvest.

Even that vast extension of manufactures which already strains the Merrimack through flumes and wheels, and threatens even to

turn Niagara to a mill seat: but furnishes a home market, and increases the necessity and the reward of agricultural industry: and the time is at hand when railroads shall traverse our mountain valleys, and every article shall be trundled with ease and velocity from the place of supply to the place of consumption.

In pursuing the subject I propose

First—to examine the advantages we enjoy, in this county, as an agricultural community: and compare them with advantages in other parts of the country.

Secondly—to notice some of the most essential circumstances which contribute to develop and improve these advantages.

As to the advantages we enjoy it is highly desirable that we form a correct estimate. Truth is always desirable, and this is peculiarly so, when it enables us to place a proper value upon our own property; and prevents our envying others the enjoyment of theirs, when perhaps our own is most valuable.

Such has been the rage for western emigration, for the last twenty years, that the soil of New England has, in the estimation of good judges, been greatly undervalued. New lands, to be bought for a trifle, and which being *new*, would naturally produce a few large crops, have allured many a youth from advantages which he and his family will have cause to regret for many generations. We have not a soil which will yield copiously without assiduous cultivation, 'tis true; but we have a soil which as richly repays the labor and expense bestowed as in any part of the world.

It is yet to be proved whether the soils in the western States, after a hundred years of cultivation, will be better than ours: and it is further yet to be proved, whether their sand and alluvion will as well sustain the manures necessary to recover an exhausted soil, as our own granite base.

Larger crops than are here obtained, wherever the hand of the diligent applies the plough and manure with liberality, if attainable, are hardly desirable. A few spots in which an improved system of agriculture has been introduced, have proved the boundless resources which our soil may supply, whenever our people shall be induced to apply their energies to this branch

of industry. A hundred bushels of indian corn, sixty bushels of oats, forty bushels of rye, three tons of hay, three hundred bushels of potatoes, have severally been raised on an acre of our soil—and when its value, compared with prices in the western country, is taken into the account, it is believed that few cultivators of the soil will find a richer reward. If man could live by bread alone, it might perhaps be an object to transport ourselves to the banks of the Ohio, where grain generally bears from one-fourth to a third of the price it does here: but we are now speaking of farmers, living in decent style, who have many things to buy, and ought always to have something to sell, and to such, one bushel of grain raised here, will bring him in as much of cash, or the necessaries of life, as four raised in the western country.

When in former years I used to partake of the labor of "hay-time," and brooded over the hardship of spending all summer in providing food to sustain the cattle over winter, I thought the farmers of the south were blessed indeed, where the cattle could find their own food on green pastures all the year, and fatten at large beneath a milder sky. But upon better information I found, that instead of raising fine cattle without labor, they could scarce raise them at all; that their beef was poor, and a Georgia cow scarcely yielded more milk than a New England goat; and that instead of green pastures all the year, grass hardly grows, and they scarcely know what a green pasture is.

A medical friend,* who spent a summer in Georgia, observed that all appearance of green grass in fields or pastures, is entirely parched and dry by August; that the few cattle live on straw, and the tops of corn, and by picking a little grass along the banks of streams and in shady places. So that our southern States, aside from the artificial curse of slavery, can hardly claim advantages over New England.

We enjoy advantages somewhat peculiar in having fertile lands along the seacoast, so that we have a ready market and our green hills greet the eye of the mariner as he sails along our

* Dr. Warren Abbot, deceased.

shores. The other maritime counties of this State, would suffer much on a comparison with Essex. And along our southern coast, Virginia, the Carolinas, and Georgia, present for the most part, for eighty or one hundred miles from the sea, pine barrens, sandy plains, and swamps, abounding in noxious insects, and venomous reptiles. A single swamp, lying in Georgia and Florida, is one hundred and eighty miles in circumference! and no degree of fertility, or an everlasting summer could compensate for the pestiferous exhalations, which during many months of the year load every breeze with pestilence and death. Another medical friend,* who spent a summer, in Charleston, South Carolina, informs me that though that city is extremely unhealthy, compared with northern cities, yet the country around it, is vastly more so. Very few white people live in, and as few as possible attempt to cross over the level country for sixty or seventy miles back of Charleston in summer. To go beyond the ramparts of the city, especially in the night time, is for many months almost certain death! Now what degree of fertility added to our soil, would compensate for such an atmosphere?

Casting our eyes to the southwest, the country along the lower Mississippi, must have been once an immense bay, or arm of the Gulf of Mexico, but the alluvial deposit, floated annually down this immense river, from the boundless west, has filled up this bay: and made most of it into swamp, and part of it into something like dry land. The immensity of waters from three thousand miles, and ten thousand hills, still kept a main channel through this wilderness of *water* and *mire* and *driftwood*, and depositing more soil, when the thickened waters first spread from the main channel, than was carried farther back, the banks of the river became much higher than the back country.

The fertility of this soil, and advantages for commerce have allured people to settle along this river bank: and an artificial dam has been erected for one hundred and seventy miles above New Orleans, to keep the waters in the river during its annual overflow! and to defend the city of New Orleans, and the plantations which lie behind this bank, from inundation! Here

* Alonzo Chapin, M. D. now Missionary at the Sandwich Islands.

land more fertile than your granite hills offers its abundance of cotton, sugar, rice and corn, but among these rich plantations, the malaria sweeps with the besom of destruction, and hundreds of our enterprising young men go annually to gain property, and take the fearful chance of laying their dust, where even a grave cannot be prepared but fills with water before it receives its tenant.

A clergyman of this State,* who was seized with this spirit of emigration, some years ago, and has indulged it to his heart's content, informs us that the villages on the Arkansas and Red rivers are uninhabitable during summer, and the people leave them and build camps in the woods, and on higher grounds, to escape certain death. He spent one summer in one of these encampments, battling with the musquitoes, and resolving to improve the first moment of escape to a more northern climate.

Over all this southern region of the United States you might search in vain for an assembly like this. An industrious yeomanry is there unknown. There the taskmaster brandishes his lash, and the slaves labor beneath a burning sun, curse the race that fatten and luxuriate upon their toil, and whet the appetite of revenge and the scythe of death for a day of future retribution.

Fathers and mothers of New England ! Could all the gold of Mexico induce you to fix your domicil, and leave your children, where their only chance of safety was the prospect of holding a population of two and a half millions, and their rapidly increasing posterity in a state of perpetual bondage? with an equal chance that thirty years will turn the scale, deluge the country in blood, and give the white population only the desperate alternatives of death, slavery, or exile?

Comparing the higher regions of the great valley of the Mississippi with our own State, we shall also find its advantages so nearly overbalanced by disadvantages, that a wise man will feel reconciled to the soil and climate of New England.

The immense vegetation which annually decays in a rich alluvial soil, saturated with water, is sure in a warm or new country, to render the air unhealthy, and produce bilious and

* Mr. Flint.

other diseases. *Here*, if we find a few acres of swamp, too low to be drained into some running stream, we consider it a deformity, and are suspicious of its influence upon health; but in all the boundless regions of the west hitherto explored, swamps lying so low that the rivers annually overflow into them, and there leave ponds of fresh water, to stagnate and pollute the air, are a general feature of the country. *Here* the waters run off from our hills, plains, and meadows, into the rivers; *there*, over millions of acres, the waters come down the rivers, overflow their banks, and run back into the swamps. Much of this land may in process of time be made useful, by cutting canals through the river banks, that the waters may drain off when the inundation subsides, but a population of one or two to a square mile, makes slow progress in draining the unnumbered thousands of stagnant pools, and "dismal swamps."

I should consider myself as criminal, were I to traduce the character of a country, as the character of an individual; and I would not state these facts in such an assembly, but for what appear to me to be justifiable motives.

Thousands of our youth have been allured from their paternal homes by accounts of the plenty and fertility of western lands, without duly considering the labors, privations, and perils they must encounter in cultivating and reaping the fruits of this fertility, in the bosom of a wilderness, on the borders of an immense desolate prairie, or in the midst of a spreading inundation.

Nor have many of these emigrants considered what they will find painfully true, that they and their generation will have passed off the stage, before their new homes possess the advantages of a New England settlement,—comfortable dwellings, fruitful orchards, good roads, social villages, schools of science and temples of the living God.

Every mail from the west teems with the Macedonian cry, come over and help us. Hundreds of youth accustomed to spend their sabbaths in the churches of the puritans, now find, by privation, the value of those privileges which perhaps once they slighted; and the question whether this floating population, brought together from the four quarters of the world, is ever to

settle down into anything like the moral and religious society of New England, is yet to be decided.

An intelligent gentleman with whom I lately conversed, who went from this county in 1817, and resides in one of the principal cities on the Ohio, and who has been more successful in his pursuits than most of his fellow emigrants, says he would not advise any one to go into the western valley who is comfortably situated as to business or property here. A long life scarcely serves to wean a person of common sensibility from the faces of his friends and the tombs of his ancestors. To thousands who have gone out from among us, New England will still be their "*home*," and the western valley their place of exile.

It is true, my friends, that you might go where you would find a deeper soil and a milder climate, or you may command a wider extent of territory, and live with less labor—but who of you would exchange your "sloping hills" and your granite fences, for the vast prairies and wooden fences of the west?

Who of you would leave your warm barns and well-fed flocks, that you might see your cattle picking a precarious existence, through the winter, in marshes and fens, or shivering with wet and cold around an uncovered haystack?

Who, to avoid the drifting snow and driving sleet, would leave the land of pleasant sleighrides, and happy winter evenings, to breath the sirocco, which sweeps from the Gulf of Mexico for weeks together, up the boundless valley, loaded with the fetid exhalations of a thousand bayous and swamps?

The cold seasons of 1812 and 1816, and the intermediate years, produced a disposition in many to abandon their native land, as though nature had changed, and the divine promise of seed time and harvest had failed; but the profusion with which the fruits of the earth have been showered around us, for the last fifteen years, should teach every farmer to value his soil, to be content with his climate, and never to distrust the faithfulness of Him who governs the seasons.

Alternate showers and sunshine have covered the earth with a luxuriance of fruit which has literally compelled many of you "to pull down your barns and build greater."

'Tis true your lands are not annually enriched by the alluvion of rivers three thousand miles long: nor are your fences and cattle and buildings swept away by the overflow of such rivers. Yet no part of the country is more finely diversified with rivers and streams of water, than Massachusetts—than your own county of Essex. Almost every farm is supplied by its running brook—mill-streams and rivers of manageable magnitude are found in almost every town: and the majestic Hudson rolls not a more beautiful sheet of water, nor presents banks more luxuriantly fringed with shrubbery, or exhibits finer river scenery, than your own Merrimack. With strict truth we may here apply the lines of the poet of the Connecticut:

"No watery gleams through happier villas shine,
"Nor drinks the sea a lovelier wave than thine."

From what has been said and from many other considerations, I conclude that the sons of New England should value their birthright, and wherever their enterprise may lead them in pursuit of wealth or honor, that they have cause to prize the land of their nativity—the land of constant industry and steady habits—the land of "bibles and of sabbaths"—the land of "red schoolhouses and white churches"—the land where slavery is unknown.

"My own green land forever.

"O! never may a son of thine,
"Where e'er his wandering steps incline,
"Forget the sky which bent above
"His childhood, like a dream of love."

Although the sceptre of political power may have departed from the "*cradle of liberty*," and even the seat of *empire* be already loosening from its foundations for its removal from the Atlantic States; yet the time-honored history of the past—the happy institutions and habits of the present day—and the enterprise which is inherent in the sons of the pilgrims—will ever secure New England an honorable place in her country's annals, and as the Jews from every nation under heaven, look towards Jerusalem, as the land of hope and of promise;—so the distant

wanderer o'er sea and land, shall in vision or reality return to wander over the happy haunts of his childhood, and lay his ashes on his native soil.

True these opinions would be of more weight if they came from abroad, or from one who had travelled extensively; but these estimates of other parts of our country are founded on the observations of *many competent* witnesses; and as it is an honor to a child to highly esteem his father's house, so I consider it an *honor*, a *duty*, and a *privilege*, to do justice to my native soil.

Let us now attend to some of the means essential for the improvement and enjoyment of these advantages.

And one of the first requisites for the improvement of our advantages is—*untiring industry.*

It is often literally true that the hand of "the diligent maketh rich;" but where from any cause it fails to enable a person to gather *heaps of shining dust*, it always in this land enables the diligent to possess constantly and plentifully the necessaries and comforts of life, which to every reasonable mind is true riches.

See England by her active *industry* extending the arm of her power over every sea, and drawing her supplies from the remotest corners of the earth.

Water and steam and muscular force, is in perpetual action. The very elements are forced to labor, and the island is one vast workshop. Her ships and seamen brave the tempests of every sea, and bring back the riches of every clime. The merchandise of both the Indies congregates in her warehouses, and her merchants are literally princes, and a hundred millions of the indolent Asiatics own their authority and lay their unwilling tribute at their feet.*

The advantages of industry on a large scale, are also strikingly illustrated by the comfort and prosperity of *New* England compared with our southern States.

* Yet notwithstanding the political power and grasping policy of England, the nation is so convinced of the iniquity, impolicy and uselessness of personal SLAVERY, that it is not permitted on her soil, and is about (at a great expense) to be extirpated from her colonies! an example worthy to be followed by our nation, when boasting of its LIBERTY and proclaiming that "all men are born free and equal."

While New England retains habits of *industry*, she *will* prosper under any system of policy which the general government can constitutionally pursue. And though a vacillating policy, and frequent and sudden changes, may embarrass and perplex our commerce and manufactures, yet even that can only diminish the profits of the people, but reaches not the deep laid foundations of New England prosperity.

While on the other hand our southern brethren may threaten or nullify—change the tariff or perpetrate a revolution,—they will still find they have not reached the cause of their depression. The absence of voluntary vigorous *industry* is the real cause of the evils of which they complain. A white population ashamed to be "seen with implements of labor in their hands," and a black population doing as little labor as possible, is enough to "nullify" the prosperity of any country. Perhaps some may imagine that it were easy to grow rich where men possess slaves who labor without wages. But let such remember that these slaves are also men, who must eat or they cannot work—that they must be maintained, the old and the young,—the sick, the "lame, and the lazy," with the taskmasters necessary to make them labor at all, before any surplus can arise to support the luxury of the landlord. Now put a hundred of these laborers, as they would rise, from infancy to age, under the care of some hireling taskmaster, while the owner of the whole concern is absent at a horse race, or a barbacue, and what is his chance of a clear profit, for the support of a princely retinue?

Take even a hundred poor people of New England: let the maintenance of them and their children be made sure, thus removing all the stimulus of liberty and property on the one hand, and all fear of poverty and want on the other, and who of you would become bound for their maintenance for all the surplus of their labor? You would much sooner hire the laborers, pay them their wages, and dismiss them to their own cares, when the labor was done.

You will therefore see that slavery lays the axe at the root of the tree of *industry*, and that indolence saps the foundation of public or private prosperity. Whatever removes the stimulus to

industry, whether political, moral, or physical, it is equally ruinous to nations, states, private families, or individuals.

To no class of men does this necessity of constant industry apply more forcibly than the farmer. He turns his own wheel of fortune, more emphatically than almost any other class; those great and sudden turns of fortune which sometimes raise or depress others, lay quite out of his track. With firm foot hold he climbs the *ascent* to wealth; or with loosened energies he slides down the gradual *descent* to poverty.

The eyes of the master or owner must pervade the whole establishment; his mind and his hands must be equally ready to do their appropriate work; his example must be such that no idler can feel easy for an hour on his premises.

Another requisite to prosperity is *systematic plans.* Men who have no enterprise to plan will have still less if possible to execute. Few men do more than they intend to do, and there are or ought to be few who have not ambition enough to rouse all their energies to accomplish what they have once deliberately planned to do.

I would by no means encourage or excite inordinate ambition, but still a desire for property, and accommodation (call it by what name you please) is the life-spring of all that is laudable and valuable in society.

That man who is the mere child of circumstances, acting only as he is acted upon by his necessities, may enjoy a kind of *Indian tranquillity*, but with such men only, the march of improvement must stop in its course, and society fall back into barbarism.

That man who aims at nothing, will certainly accomplish nothing; he that is content with a cabin, will never possess a palace; but he that figures to himself the conveniences and elegancies of life, will make exertion to obtain them, and will enjoy at least as much in a well directed pursuit, as in the full possession.

The farmer who is content with a shabby house, wooden fences, and ten bushels of corn or five hundred of hay to the acre, will seldom find himself in a better situation, while he who

plans to possess good buildings, permanent fences, and to see his lands ornamented with fruit trees, and covered with seventy bushels of corn, and three tons of hay, to the acre, with life and a common blessing, will certainly accomplish his plans.

You are perhaps most of you familiar with the history of Sir William Phipps, who raised himself from a wood coaster from the then wilderness of Maine, to be knighted by King William, and made Governor of Massachusetts!

He used to say when in his lowest state, that he should live in a brick house in Green lane, (now Brattle-street,) Boston, and command better men than he was then thought to be himself—and his own confident perseverance accomplished what he had planned. He had his brick house in Green lane, and commanded in chief the State of Massachusetts. Now all cannot be Governors, nor raise from the ocean a Spanish galleon laden with gold as he did, but all by good plans, with industry, economy, and health, can obtain that which is just as good, comfortable dwellings, good farms, and a competency of other appendages.

A third requisite for success to the farming interest is that the farmer's mind should be in his business. That man who is above his business, is in danger of soon finding that he has got below it; for no business will long sustain a man when his mind has got above it. That farmer who devotes his mind and his energies to his farm, till it is so far improved that it elevates him above the necessity of constant labor, is the most independent and enviable character in our country; free from the responsibility of office, and the toils and cares of a profession, he eats the fruits he has reared, with more zest than can be realized by any other class. A good farm covered with flocks and herds and fruits, is a truly enviable possession, and like Robinson Crusoe, the farmer is often "monarch of all he surveys."

Another requisite to prosperity, is the keeping of good accounts. Farmers not being under that constant necessity of using the pen which attaches to men of business, are too apt to throw it quite aside; and it is believed have often suffered by

trusting to others' accounts, to memory, or to marks on their doors and wainscots.

To record in a book kept for the purpose, all their labor and experiments upon their farms, as recommended by a distinguished agriculturist, in your last annual pamphlet, I have no doubt would richly compensate the labor, but it is my present purpose to urge the necessity of keeping a fair and exact account of the date and circumstances of every money or barter transaction between man and man. It would save many of those uncharitable thoughts and hard speeches which often alienate friends, and disturb the peace of neighborhoods.

If every person kept exact accounts of all his debts and credit, law suits would be very unfrequent, and our friends the lawyers would be relieved from the disagreeable necessity of sending their uncharitable "Greetings," or writing "your goods and chattels are attached," or "for the want thereof take the body." And as I always rejoice when the bodily health of the community is such as to relieve physicians from the care of the sick, to turn their attention to their books, their farms, and their gardens; so will I rejoice when the health of the body politic, is such, that our much esteemed friends, the lawyers, may be *entirely* relieved from professional cares, to devote their distinguished talents to employments more profitable to the community.

One more requisite to prosperity you must permit me to name, and that is the disuse of ardent spirit.

I am sorry that I cannot name this subject, without exciting some unpleasant feelings, but I cannot, in justice to this Society, or my profession, omit to mention a cause which has so long hung like a mill-stone, to weigh down the prosperity of the country. No portion of the community have paid a heavier tribute to the distillery than the farmers. Their laborious occupation and exposure to heat and cold, fostered the belief that ardent spirits were necessary to them. But this error is now nearly exploded, and I rejoice that the hour of their emancipation has arrived. Too long have you submitted to a tax which neither you nor your fathers were able to bear,—a tax ten times more burdensome that Great Britain ever attempted to impose,

when it was resisted by a seven years' war. But what is worst of all is, that this tax is not like the tax on tea, merely collected and carried out of the country, but it returns in another form to curse the payer and make him an idiot and a slave. Here some will object, and say they still use spirits, and have neither spent their property, nor destroyed their intellects. I allow the truth of the assertion, some *can* bear the expense without serious embarrassment, and regulate their appetites so that they are never drunken. But to such I would say, you incur a useless expense, and encourage by your example your neighbor, who can neither bear the expense, nor regulate his appetite. Let me entreat such to change their example to the other side of the question, and lend their aid in drying those tears of heart-rending anguish which flow without mixture, where a husband and a father is spending his estate, wasting his time, and converting himself into an idiot or a savage. We have all seen those that thought the same—that they knew what did them good, and could govern themselves ; that they were in no danger of being drunkards, and resented even the suspicion of danger. But still they are lost, their business neglected, their property spent, their farms mortgaged, their families ruined ! I would that this were only imagination ; but I know, and you all know, that it is the truth, and that in numerous instances.

But some say this is a land of liberty, and they scorn to be even *persuaded* not to exercise it, in every particular.

What a glorious liberty it is for a man to exercise, to leave his business, travel four miles and back, under a burning sun, to vindicate his right to spend twenty cents for rum ! to tickle his palate, intoxicate his brain, and burn up his liver—hiding his bottle, and hanging his head like a thief, when he meets those whom he owes and cannot pay. My friends, I paint from real life ; but I hope such *farmers* are scarce.

Now, who enjoys real liberty ? He who consumes only the produce of his farm, or drinks pure water from the cooling spring, and returns to his labour, sober, thriving, and independent ?—Or he whose every shilling is mortgaged to the retailer before it is earned—who is too head-strong to be persuaded, and too far *gone*

to make a self-moved and independent resolve to be free? Were I the subject of any government, or the servant of any master on earth, who exacted as heavy a tribute as I have seen paid, or as hard service as I have seen performed, or imposed as heavy sufferings as I have seen endured, by ardent spirits, I would resist at the hazard of my life. I would organize a rebellion to the extent of my influence. I would die in the last entrenchment, and ensure the extermination of my posterity, before I would submit to it.

But some farmers yet say they cannot hire laborers, unless they give them ardent spirits. This does for an excuse, when both the owner and the laborer are desirous to use it; but no man who is firm and unwavering, leaves his crops ungathered for want of help; but hundreds of farmers are now ready to testify that they never had their work done when spirits were used, so easy and so well. Seventy Physicians of Boston have fixed their names to the opinion that ardent spirits are *never* necessary to persons in health: and my own experience in labor and exposure in cold and heat, by night and by day, confirms me in the opinion that a dose of spirit is no more necessary in health than a dose of calomel or tartar emetic.

The expense of a gallon of rum a week, to a farmer, is no small consideration; in twenty years if saved it would make him a handsome estate, or the want of it may make him a beggar. Whether we therefore consider it on the score of health, morality, or expense, it becomes among the most important considerations in the prosperity of a farmer.

Finally, my friends, I congratulate you on the prosperous condition in which this anniversary finds your society. How the exhibition of this day may compare with preceding ones, in its details, I am unprepared to state; but that the society has exalted the standard of agriculture, called into exercise a great amount of female ingenuity, promoted harmony and useful intercourse, diffused the knowledge of useful facts, and exerted a beneficent influence, I have no reason to doubt.

The formation and support of societies is among the most efficient means of improvement, in all the useful arts of the

present day. It encourages and rewards the spirit of enterprise; it diffuses the knowledge of useful experiments, and introduces the use of important inventions; and tends by multiplying opportunities of social intercourse, to do away those illiberal feelings, and groundless jealousies, which often exist between different sections of country, and sometimes even disturb the harmony of towns and neighborhoods.

Some have entertained doubts of the utility of this annual festival, as a useless expense of time and money. Let such remember that man is a social being, that a constant unvaried round of solitary labor is unfitted to his nature, and by no means adapted to the highest development of his intellectual and physical energies. Divines, lawyers, physicians, have their societies, in which they meet to discuss their professional operations and brighten their minds by friendly collision. Merchants daily assemble on 'change, to learn the interests and improve the facilities of trade. And shall the farmers deny themselves a day, on which all who take an interest in agriculture can meet on common ground, merely because they do not handle the direct and palpable income of a day's labor? No! Their necessities do not demand it, and the place they occupy in our community forbids the slavish idea.

Societies are found the most direct means of accomplishing almost every enterprise in our growing republic; and annual or periodical festivals, have the sanction of scripture, and the remotest antiquity. The Jewish ritual enjoined a festival and offering of first fruits at the ingathering of the harvest, a day in which they should "*do no servile labor.*" The Romans and the Greeks had their agricultural fetivals, dedicated to Bacchus and Ceres, whom they honored as the gods of corn and wine: and it has also the sanction of reason, as the fruits of autumn fall, to assemble, mutually to communicate the result of their labors, and enjoy what has been emphatically styled the *farmer's holiday.*

Long may this society enjoy the smiles of heaven. Long may they enjoy the character for industry, sobriety and morality,

which for two centuries has distinguished the farmers of New England. And long may they continue to reap abundant harvests,

"Till the great reaping time shall come,
"And angels shout the harvest home."

REPORTS.

I. ON FARMS.

The Committee of the Essex Agricultural Society, on Farms, in submitting their report, are compelled to repeat the expression of regret made in former years, that so few of the farmers of Essex are willing to become competitors for the liberal premiums offered by the Society for the "good management of farms." Is this backwardness to submit their farms to the inspection of the Society, owing to a mistaken apprehension that the Committee will expect to witness some brilliant discoveries or very striking improvements in farming? Of these, the present state of agriculture in this county, is hardly susceptible. The premiums of the Society are chiefly designed to encourage that judicious and systematic use of those means which are in the power of every farmer; and the exercise of that skill in husbandry, which will necessarily result in the improved appearance and increased productiveness of a farm. And the number of farmers in Essex is not small, who might very safely challenge the Committee of any Agricultural Society, to make a personal examination of their management of their farms.

Only two Farms were entered for Premiums: those of

Joseph Kittredge, of Andover, and

Thomas Chase, of West Newbury.

Your Committee visited the farms of these gentlemen in July, and again in September, and were gratified in witnessing their judicious and successful husbandry. Their respective state-

ments of the produce of their farms and the modes of cultivation, are subjoined, and show a very liberal return in crops.

The farm of Mr. Chase consists of a variety of soil of good quality, a part of it being hilly, and a part wet meadow land. As a whole, it presented that improved aspect which is the natural result of a long course of industry and good husbandry. The quantity of products given in his statement, is large in proportion to the amount of labor employed, yet there were no indications of neglect in any of the operations of the farm. His product of Indian corn, two hundred and forty-nine bushels on four acres, which produced also twenty-five bushels of potatoes and forty bushels of turnips, is large, considering that the season was not favorable to Indian corn. He considers that the application of ashes to his corn at the second hoeing, was beneficial to the crop, and in this opinion we believe he is sustained by the experience of farmers generally. His crop of eleven hundred twenty-eight bushels of potatoes, on four acres,—a hill, steep enough to deter many farmers from attempting to plough it, must also be considered a very good one for the season. Mr. Chase thinks he has improved a hilly pasture, by ploughing horizontal furrows round the hill, in the manner recommended by Rev. G. B. Perry, in the Transactions of the Society for 1830. Indeed he seems to have done precisely what good husbandry dictated, in ditching and draining land that was too wet, and in retaining the moisture on that which was too dry. The result of his experiment in regard to cutting stalks, viz. that the produce was greater and the corn riper, where the stalks were cut, though late, than where they were left uncut; is at variance with the opinion of many judicious cultivators, that corn is injured by cutting the stalks; but this is a question not conclusively settled, and cannot be by a single trial; but only by a succession and variety of carefully conducted experiments. The Committee do not concur with Mr. Chase in thinking a crop of wheat, VERY uncertain, but believe, that if the seed is properly prepared, sown early, on a congenial soil, well dressed with lime or ashes, it will in most years well repay cultivation, and that the farmers of Essex will practise a wise economy, in endeavoring

to raise their own wheat. Mr. Chase's statement of the arrangement of his time and meals will be interesting to practical farmers. His example furnishes another proof that the labor of a farm can be well done without the use of ardent spirits. The Committee regret that Mr. C. was prevented by a fractured limb, from furnishing his statement within the time prescribed by the Rules of the Society, but believe that this misfortune will be accepted as a sufficient apology for the delay. Your Committee thinking that the farm of Mr. Chase presents an example of judicious, prudent and economical management, regarded as a whole, consider him as deserving, and accordingly award to him the Society's first Premium of *Thirty Dollars.*

The farm of Doctor Kittredge, is situated on a very beautiful swell of land in the North Parish of Andover. It is a rich and rather moist soil inclining to gravel, and has been brought by the liberal use of manure to a high state of fertility. The whole farm presented the appearance of good husbandry. The stock was good, and in good condition, the crops were clean, and a very handsome orchard was in a thrifty, bearing condition. Doctor K.'s corn crop was nearly as large as Mr. Chase's on the same number of acres, and their modes of cultivation were very similar except in the distance of the hills. His experiment in raising winter wheat was highly successful, and the product of forty bushels from one hundred and thirty rods of land sown with winter rye, is uncommonly large, being at the rate of fifty bushels to the acre. Doctor Kittredge attributed much of his success in raising large crops of corn and potatoes, to the practice of fall-ploughing, while Mr. Chase expressed to the Committee, his preference for spring-ploughing, and thus an important question is presented, which the Committee will not now attempt to decide. A long essay might be written on the comparative advantages of spring and fall ploughing, and we hope some member of the society will confer on it the favor of furnishing for its Transactions, a full examination of this interesting question.

It is almost surprising that in an art so old as agriculture, there should still exist such differences of opinion in regard to most of its operations; but it should be remembered, that these questions can only be settled by a great number of accurate

experiments, made with a due reference to soil, manure, seasons, and other circumstances, and that it is only within a few years, that Science has been invoked to lend her aid in the operations of Husbandry.

Your Committee, considering the farm of Doctor Kittredge as a specimen of liberal, thorough, and successful cultivation, award to him the Society's second Premium of *Twenty-seven Dollars.*

It is not possible to do exact justice, by instituting a comparison between two farms so unlike as those mentioned in this Report, without being made acquainted with their management and the expense applied for a series of years. Judging from the present appearance, it would seem, that no expense has been spared by Dr. K. in bringing his farm into its present improved condition. Such management is well, by those who can afford it, and in the end it will bring its reward. But such management cannot be safely practised by those who have to rely entirely on their farms and their labor for their support. Mr. Chase's farm is a good illustration of what may be accomplished by persevering industry and economy, as a farmer. His statement of produce and labor, is made with so much precision, as, other things being equal, to induce the Committee to give him the preference herein expressed.

Your Committee have received from Mr. Hezekiah George, the intelligent and judicious manager of the Town-farm in Haverhill, on which the paupers are supported, of which the Committee have in a former report made honorable mention, a communication, stating the produce and cultivation of an acre of land on that farm sown with oats. The crop was uncommonly large and heavy, being seventy-eight bushels twenty-six quarts of oats, weighing thirty-six pounds to the bushel. The Committee, not being authorized to award a premium for a crop of this sort, can only refer the subjoined communication of Mr. George to the favorable consideration of the Trustees.

For the Committee.

JAMES H. DUNCAN, *Chairman.*

December 31, 1833.

JOSEPH KITTREDGE'S STATEMENT.

To the Committee on Farms:

Gentlemen—I send you a statement of my farm, agreeably to the rules of the Society. I improve fifty-four acres as English mowing, tillage and orcharding. The soil is mostly of a black mould, resting on a hard pan—ten acres of meadow, forty of pasturing, thirty-six of pine land, that I sow with rye every third or fourth year, and one hundred and seventy acres of unimproved and wood land. I cultivated the present season four acres with corn in the following manner. In the autumn of 1832, I ploughed the land to the depth of seven inches; as early in the spring as the land would admit, I spread eighty common carts full of winter manure on the furrows, harrowed until the manure was completely mixed with the top of the soil; furrowed it so that the hills were three feet apart; then with hay and fall manure that was laid upon the land last autumn, in large heaps, manured in the hill with about the same number of loads—hoed twice in June: in July the corn was so thick that I could not hoe a third time, and had every weed pulled, taking care through the whole process, that the sod was not disturbed. The product of the above four acres was four hundred and seventy-seven bushel baskets full of sound ears or 238 bushels of corn. I have followed this method for three years last past, and feel confident that I have increased my crop one-third.

I sowed with oats and barley five acres and one hundred and two rods that was planted the year preceding, with corn and potatoes. I did nothing to the land but ploughed it twice as well as it could be to the depth of seven inches; sowed on the acre fifteen bushels of oats and four of barley; harrowed with an iron tooth harrow and brushed smooth. Had measured of oats 207 1-2 bushels and of barley 57 1-2 bushels.

I cultivated one hundred and twenty-nine rods of land with winter wheat, and one hundred and thirty rods with winter rye, side by side. I ploughed the land the first week in September, 1832; the third week, spread twenty-eight carts full of good fall manure on the top of the furrows—harrowed until the ma-

nure and the furrows were intermixed; sowed one bushel of winter wheat, and one bushel and six quarts of winter rye; then harrowed again, taking care that the sward was not inverted. The result of this experiment was that I had eighteen bushels of winter wheat and forty bushels of winter rye. I planted one acre and thirty rods of sward land with potatoes that I ploughed last fall—in the spring I spread twenty-five carts full of home manure, cross-ploughed, then spread twenty carts full of fall manure, harrowed and furrowed three feet each way, hoed twice. Had measured from the above 358 bushels. By estimation I had fifty tons of English and ten of meadow hay. I had made from the apples that grew on the farm sixty barrels of cider, and had fifty barrels of winter apples; made five hundred and seventy-four pounds of butter; have killed six hogs that weighed 1826 pounds. I have four large oxen that I am stalling that are estimated to weigh 5000 pounds, and two smaller cattle; one pair of working oxen, ten cows, twelve head of young cattle and horses. Two of the cows have been used by my mother, and two have run with calves.

The labor employed the present season was three men from 1st of April to 1st of December—had fifty additional days' work in the hay season.

All which statements are respectfully submitted by your obedient servant, JOSEPH KITTREDGE.

December, 1833.

Surveyor's Certificate.

I hereby certify that I have measured the parcels of land mentioned in the foregoing statement, and found them as follows, viz.

Winter wheat		129	square rods.
Winter rye		130	" "
Potatoes	1 acre	30	" "
Oats	5 "	102	" "
Corn	4 "		

WM. FROST, JR.

December 3, 1833.

THOMAS CHASE'S STATEMENT.

To the Committee on Farms for the County of Essex:

Gentlemen—I submit for your consideration such a statement of the produce and management of my farm the present year as is in my power to make.

The homestead contains 98 acres, soil generally good, but somewhat hilly, and improved as follows:

Sowed 4 acres, planted 10 do., 40 do. pasture, 32 of English mowing, and 12 acres of fresh meadow.

Pastured on the farm, 1 horse, 9 cows, 1 pair of oxen, 30 sheep and lambs, until the 20th of September, when the sheep were removed, and a pair of oxen put in their place.

By weight, measure, and estimate, the produce of the farm is as follows:

English Hay, 44 tons.
Meadow do. 13 do.
Herdsgrass and redtop seed, 5 1-2 bushels.
Sowed 4 1-2 bushels of wheat-crop, 48 bushels.
Do. 1 1-2 do. of rye, do. 18 do.
Do. of barley 2 do. 14 do.

Planted 4 acres of Indian corn and potatoes; produce 249 bushels of corn and 25 bushels of potatoes and 40 bushels of turnips.

Planted 4 acres of potatoes, 1128 bushels. Also 2 acres let on shares, whole crop 35 bushels of Indian corn and 140 do. of potatoes.

The 6 acres last mentioned was pasture land, one half of which was never ploughed before, it being on the side of a very steep hill.

In the garden 18 bushels of potatoes, beans and sauce sufficient for the family a year.

Cider, 29 barrels. Apples, 34 bbls. Apples and peaches sold, $18 50
Beef and one pair of oxen sold, $116 78
Pork sold, 1188 pounds and 2 hogs to kill, $83 16
Sold 6 pigs, 4 calves, 10 lambs, $44 00

Wool, from 13 merino sheep, unwashed, 88 pounds; from 10 do. half merino, washed, 34 pounds.

Butter, 674 pounds. Cheese, 2033 pounds.

My grain was sowed the 16th and 18th of April: with 1 peck of herdsgrass, 1-2 bushel redtop, and 6 pounds of clover to an acre.

Indian corn was planted 7th, 8th, 9th and 10th of May; the hills 3 feet 9 inches by 3 feet 6 inches apart; ploughed in 20 loads of manure and put 6 in the hills to an acre. My cart holds 45 bushels of potatoes. Also put about a pint of ashes to a hill, the second time hoeing, on one-half of the piece; I think to good advantage.

The potatoes were planted as was most convenient, from the 10th of May to the 5th of June. They were manured with 8 loads of good winter manure put in the hills; as near as we could judge were 3 1-2 to 3 feet apart.

I have paid much attention to increasing the manure on my farm by drawing wash and loam from the highway, and much from the low ground into the barnyard. We had 150 loads of manure last spring. My method is to plant the first year with potatoes, second with Indian corn, third sow grain and grass seed.

I have improved my pasture by ploughing furrows two rods apart, horizontally round the hills which were covered with moss.

I also improve 12 acres of salt marsh lying 6 miles from home, which produced 18 tons of hay. It has recently been ditched 3 feet deep and 2 rods apart. Also 82 acres of pasture land lying 2 miles from home—improve about 50 acres; the remainder rent out. Also, 16 acres of wood land.

The fruit on the farm about half the usual quantity of past seasons.

Killed 4 hogs last year, weighing 1900 pounds, 15 months old.

Owing to the season the quantity of butter fell short considerably. The rest of the produce about as usual.

The stock on the farm is as follows: 4 oxen 5 years old next spring; 9 cows; young cattle—5 three years old, 5 two years

old, 5 one year old next spring. Also, 1 horse, 2 colts three years, 1 two years old, last spring, and five swine.

I commenced cutting my cornstalks the 2d of Sept. and fed them out to the cows through the month. I let some stand until harvest. Where the stalks were first cut, the corn was gathered while I was confined; but where last cut, the corn was riper than where they stood until harvest. A basket in which the corn was measured, was filled with ears from each; that where the stalks were cut made one quart more than where they where not cut, besides the loss of stalks; a bushel weighed 60 lbs.

I consider a crop of wheat as very uncertain. I have known the most promising blighted by sudden change from heat to cold, and by a heavy shower in a very warm day. Leached ashes I consider a very good manure for wheat.

The labor on the farm has been my own time, George Thurlow's, my son, and one hired man at eleven dollars a month, for eight months, and 29 days at one dollar a day. Also, a young woman 24 weeks at one dollar per week. My wife superintends the dairy. Before ploughing we earned 53 dollars, besides the business of farm.

We have spent 65 days in taking down and rebuilding a barn, and 70 days in removing loam and gravel, and laying stones for the foundation of the barn and shed, besides the labor of the team; have made and new laid 50 rods of stone wall; and dug 120 rods of ditch, 70 on land purchased last spring, which is 3 by 2 feet; set 200 apple trees; also, set about 400 grafts.

Since the 5th of October I have been confined to my bed and house, with a fractured hip, and until lately have been unable to do any thing.

Our custom is to drive the cows to pasture and feed the swine before breakfast. And to go to field in summer at six o'clock. Luncheon with tea or coffee between 9 and 10. Dine at half past twelve—our drink cider and coffee; tea at 5—if desired, milk after; beer, water, and milk and water, is all the drink required in the field. The grass that grew on one half

acre was fit for nothing but manure and was not taken into the account.

I consider Indian corn as productive as any crop we raise; where there is 60 bushels to an acre the corn-fodder on the same is worth as much for a stock of cattle as a ton of English hay.

All which is respectfully submitted. THOMAS CHASE.

West Newbury, December, 1833.

HEZEKIAH GEORGE'S STATEMENT.

To the Trustees of the Essex Agricultural Society:

Gentlemen—I respectfully submit for your consideration a statement of the produce of one acre of land sown with oats the present season, and the previous cultivation. The land is a part of the Town Farm in Haverhill. It was purchased by the town in the Spring of 1830, and was then in an exhausted state. It was mowed that year and yielded about half a ton of hay to the acre. In 1831, I turned in the sward, put in four cords of manure, and harvested about forty bushels of Corn from this acre. In 1832, I put five cords of manure on the acre, which yielded three hundred bushels of potatoes. The past spring I ploughed it once, and on the twenty fourth of April sowed four bushels of the oats called in this neighborhood Killam oats, and on harvesting the crop on this acre, which was measured by C. White, Esq. the produce was seventy-eight bushels 26 qts. of oats, as measured by Mr. Rufus Slocum, weighing thirty-six lbs. to the bushel. HEZ'H GEORGE.

Haverhill, Nov. 1833.

Haverhill, Aug 5, 1833. I hereby certify, that this day at the request of Mr. Hezekiah George I measured on the Town Farm a piece of land on which were a crop of oats containing one acre. CHARLES WHITE, *Surveyor.*

I hereby certify, that on the seventeenth day of September, A. D. 1833, at the request of Mr. Hezekiah George I measured the produce of one acre of oats grown on the Poor Farm of the

town of Haverhill, and found the produce to be seventy-eight bushels twenty-six quarts of very heavy oats.

RUFUS SLOCOMB.

II. ON MILCH COWS.

The Committtee of the Essex Agricultural Society on Milch Cows and Heifers, report, that three cows and one heifer were offered for premium, and one heifer for exhibition only.

The Committee believe that the unfavorableness of the season for grazing has caused this part of the exhibition to be less interesting than it otherwise would have been. This county has afforded, and we think is now able to exhibit, specimens of this kind of stock not surpassed by any in the state.

The severity of drought, which we have so generally experienced, has induced farmers to exercise their ingenuity to discover some substitute for pasture feed; and the Committee had hopes that the statements of the competitors for the Society's premiums would have suggested to them some approved crop which might be employed to remedy an evil of so frequent an occurrence. But the statements were, in this particular, as dry and meagre as the pastures.

With several prudent farmers within our knowledge, it has been a practice to provide a seasonable supply of green fodder by raising Indian corn planted thick in drills; and many others, less provident have topped their corn early and given the stalks green to their hungry cows. To cut the stalks before the corn hardens is considered injurious to the crop, but when they can be separated without damage to the corn, there is perhaps, no way of disposing of them more profitably than to give them to cows in milk, especially when there is a scarcity of feed in the pastures. It has however, been questioned whether this kind of fodder does actually increase and improve the milk. With cows which have fed to satiety on good natural feed, the effect will not be so readily perceived, but a liberal supply of corn fodder will

cause a difference in the yield of those much neglected, but most useful animals whose hard fortune it too often is, to browse all day without satisfying their hunger.

We have known instances where English turnips have been sown early, and as occasion required, have been given, without being divested of their tops, to cows in milk. In this way a large quantity of succulent fodder is obtained, and some very careful dairymen have confidently asserted that no disagreeable flavor was communicated either to the milk or the butter. On this point we are not decided, but the experiment is easily made, and every man is best satisfied with knowledge which he has obtained by his own labor and observation.

Indian meal enriches the milk, but at the usual prices of the products of the dairy and of grain, it is questionable whether the practice of feeding with it in summer is economical. It is important that milch cows should be in good condition, for the milk of such is much better than that of those which are lean.

There are other expedients by which milk is improved both in quantity and quality, but as the result of our inquiries, we say that the best substitute for an occasional deficiency of feed in summer is found by those who raise a crop of corn purposely to meet the exigencies of the season ; and should no drought occur and should there be no deficiency of feed, the crop will still be valuable, if properly cured, for winter's consumption, and besides, under favorable circumstances, corn enough will ripen to compensate for the expense of cultivation.

An occasional supply of salt is very beneficial to milch cows, and whoever expects a large quantity of good milk must provide for them good pastures and pure water in abundance. The grasses which grow spontaneously in our pastures are believed to cause cows to yield milk and butter of better flavor than either corn, roots, clover, or any other cultivated crop. Such an opinion however affords no encouragement to that thriftless husbandry which suffers extensive tracts of valuable pasture lands to be overgrown with bushes, briers and thistles ; and although this is hardly the suitable time or occasion, we would suggest to the

society, the propriety of offering premiums for the improvement of such waste and neglected lands.

The Committee award to John Kent, of Newbury, for his red cow, the first premium, $15 00

Parker M. Dole of Newburyport, for his red cow, the second premium, 10 00

Parker M. Dole of Newburyport, for his black cow, the third premium of 5 00

And to Moses Newell of West Newbury, for a handsome three year old heifer, raised by him, 5 00

John Kent's cow is seven years old, of the Greenland breed; on hay and grass feed only, besides supplying her calf seven weeks, she has produced in the last twenty weeks, 132 lbs. butter, 168 lbs. cheese, and 58 gallons milk.

Parker M. Dole's cows are of the native breed, and were raised by him: their only feed has been in a poor and overstocked pasture; besides fatting their calves and supplying his family with milk, they have yielded as follows, viz:

The red cow, in 140 days, 1352 quarts milk.

The black cow, in 126 days, 1137 " "

Captain Hector Coffin of Newbury Rock Farm, offered for exhibition only, a very handsome three year old heifer, of native stock, selected and improved by him. The Society is indebted to him for his active exertions to promote its usefulness, and to make the exhibition, as well on this, as on former occasions, interesting and respectable.

For the Committee.

DANIEL P. KING, *Chairman.*

New Rowley, Sept. 26, 1833.

III. ON THE DAIRY.

The Committee on the Dairy have attended to the business assigned them, and offer the following report:—

There were three specimens of cheese presented for premi-

ums—viz. by Richard Heath, William Thurlow and Edmund Hills, all of West Newbury, each of which came within the rules prescribed by the Trustees. These specimens your committee think were all very fine and doing great credit to the individuals who presented them, and to the town distinguished from most towns for its agricultural thrift.

Your commitee recommend that the

$10 1st. Premium be awarded to Richard Heath.
8 2d. do. to William Thurlow.

The specimen offered by Mr. Hills was very good and the committee, had some little hesitation of deciding the comparative excellence of this and that of Mr. Thurlow's, but finally decided in favor of the latter upon the fact that this was rather the most mild in taste and flavor.

There were presented two specimens of butter made before the 9th of July—viz. by Daniel Putman, of Danvers, and William Tenney, of Byfield, in regard to which your committee recommend the premium of seven dollars to be awarded to Mr. Putman ; and that of five to Mr. Tenney.

These specimens your committee regard as very good, and well entitled to the premium awarded; but cannot help expressing the hope and belief that some more effectual way of preserving butter manufactured at that season of the year, sweet and pleasant, will yet be found out, than those now practiced upon.

Of butter made during the season there was but one specimen of sufficient quantity to entitle it on that ground to reward. This was presented by Mrs. Abigail Carter, of the Fatherland Farm at Byfield. A place which from the general arrangement and style of cultivation cannot be visited but with great satisfaction and advantage by those who have any taste for, or concern in the riches of the field or of the state. Your committee consider the butter presented by Mrs. Carter, fine, but not possesing all the excellences, and not accompanied with all the account of the manner of manufacture, which would justly entitle it to the only premium offered by the Trustees this year; yet as richly deserving the liberal consideration of the Board, they recommend that a gratuity of fourteen dollars be given to her.

There were other small parcels presented which your committee considered as uncommonly fine, among which that of Mrs. John Kent, of Byfield, deserves particular notice.

In closing this report your committee cannot help expressing their regret that in a county where they know so much good butter and cheese are made, there should be so limited a number of competitors for the premiums offered by this society. If the reward offered was the only motive for bringing forth these articles, the reason might be found in the little regard which the chastened minds of the community have for that which many others *"have coveted after"*; but when it is recollected that the great object of these exhibition is to communicate and receive information on subjects of great interest to all, we cannot but think that the grand and high principles which do actuate worthy citizens should lead them, by the exhibition of their own successful manufactures to instruct and encourage those less informed than themselves. All of which is respectfully submitted.

GARDNER B. PERRY, *by order.*

RICHARD HEATH'S STATEMENT.

To the Committee on the Dairy:

Gentlemen—I submit for your examination a statement of the cheese made by me the present year. I have also exhibited a sample of about one hundred pounds of the cheese. I had nine cows from the 20th of May to the 15th of June, from that time to the 20th of September I had 10 cows. The cows are from four to twelve years old. The cows are of the native stock.

The quantity of cheese made was 2249 lbs.

The cows have been fed as in my former statement, in 1828. The process of making the cheese is similar to that contained in my former statement.

I am respectfully, yours,

RICHARD HEATH.

West Newbury, Sept. 25, 1833.

WM. THURSTON'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

Gentlemen—I offer you a sample of cheese for premium, made on my farm in West Newbury, sending, agreeably to your request, one hundred pounds.

My Dairy consisted of twelve cows in the month of June,

1 of 13 years old,
3 " 12 " "
4 " 9 " "
1 " 7 " "
1 " 6 " "
2 " 5 " "

12 To which were added two heifers deprived of their second calves the first day of July,

1 of 4 years old,
1 " 3 " " making for the months of July, August, and September, fourteen cows.

The cheese made agreeably to the rules of the society in the months of June, July, August and September, amounts to more than twenty five hundred pounds.

For its manufacture, the rennet is taken from the calf and allowed to perfectly cool, when it is very slightly rinsed in cold water and put down with strong rock salt. When taken out for use, one rennet is put into a stone pot, and one quart of water (after being boiled and cooled) put to it, and a cold brine, sufficiently strong to keep the rennet is made with the same kind of salt. Of this liquor is used from a gill to a half pint to every 30 gallons of milk, according to the strength of the rennet, heat of the milk, and state of the weather; always taking more rennet when the weather and milk is cooler, less when warmer. It is then allowed to stand from three quarters to a full hour, before breaking up the curd, believing it to be very important during the warmth of the weather to get the curd in the press as early as possible. From the beginning of breaking up the curd, the operation is continued till it is sufficiently hard and fit to scald, when

it is scalded from fifteen to twenty minutes with scalding whey, as the tenacity and state of the curd require. It then is allowed to remain till perfectly cool, when it is ground up in a curd mill; after which process it is put into the cheese hoop in layers, salting each layer by judgment, as the softness, hardness and tenacity of the curd may require, using the dry and whitest Liverpool blown salt. It is then put into the press, and allowed to stand half an hour, when it is first turned; then it is allowed to stand from two to three hours, according to the state of the weather, two hours in very warm, three in more moderate weather, when it is again turned; and it is regularly turned every two or three hours through the day, till dark; when it is left in the press for the night. The following morning it is taken from the press and put into brine, where it remains twenty four hours, being turned at sundown. At the expiration of the twenty four hours, that is, on the second morning from the milk, it is taken from the brine and swathed with a linen bandage, which is continued on from seven to nine days as requisite, turning the cheese twice in twenty four hours through the heat of the weather, rubbing them daily with pork or bacon fat in which red peppers have been simmered, and afterwards settled and strained off.

Respectfully submitted by WM. THURLOW.

West Newbury, Crane Neck Hill, Sept. 26, 1833.

EDMUND HILL'S STATEMENT.

To the Committee on the Dairy:

Gentlemen—I here present you with a sample of the cheese made on my farm. Although they are small, being made from the milk of nine cows, of native breed—besides two families using daily from it, which, probably would be the milk of one cow. I say small when compared with the cheeses which have generally been exhibited—mine weighing but fifteen or sixteen pounds, while those have weighed from twenty-five to thirty. I was led to do it, by wishing to have more competition in this article, and as the idea has ever been, that the *larger the cheese, the richer*

it is—no one has ever been induced to exhibit any except those from our largest farms.

The process of making them is, as soon as the milk is taken from the cow, it is strained into a tub, and enough rennet put in, and well mixed with the milk, to have it begin to curdle in twenty minutes. After one or two hours the curd is broken, and left in the tub to settle, until morning (if the weather is extreme warm, it is dipped into the cheese basket at night). The morning's milk is done the same with, and when the curds are sufficiently drained, they are cut in thin slices and put in the tub, and whey, almost boiling hot, poured upon them, which we let remain ten or fifteen minutes; it is then dipped into the cheese basket, and drained as thoroughly as possible; it is then ground in a cheese mill fine enough to be pressed. We generally put in a common size tea cup even full of fine blown salt, and mix it well with the curd—it is then pressed twenty-four hours, and then taken to a dark room where it is turned and rubbed daily.

I am, respectfully, yours,

EDMUND HILLS.

West Newbury, Sept. 25, 1833.

DANIEL PUTMAN'S STATEMENT.

To the Committee on the Dairy:

Gentlemen—I offer to you for premium, a sample of butter, the particulars of making which, are somewhat as follows. The milk was kept in a dairy room, in tin pans, where there was a free circulation of air—and stood from 36 to 48 hours before it was skimmed—the cream, when taken off, was kept in a cool cellar, until it was churned—as soon as the butter is gathered, the butter-milk was drawn off, and the butter is thoroughly rinsed twice in cold water, and as much of the milk as possible extracted when taken from the churn, and one oz. of salt is used for one lb. of butter. The sample in jar No. 1, made June 9, was kept 24 hours, that in jar No. 2, made June 20, was kept 36 hours, then worked the second time, and placed in glass jars,

and covered perfectly tight.—These jars were then placed in a dry cask and covered with salt, and kept in the cellar till Sept. 25. They contain twenty-four pounds each.

Yours respectfully,

Danvers, Sept. 25, 1833. DANIEL PUTNAM.

IV. ON DOMESTIC MANUFACTURES.

The Committee on Domestic Manufactures have attended to the duties assigned them, and submit the following Report:—

Although the exhibition was not so large as in some former years, there were many interesting proofs of the industry and ingenuity of the wives and daughters of Essex. It is a just cause of complaint, that while the increase of manufactories has diminished the exhibition of cloths of household manufacture, few of the manufacturers of the county send specimens of their goods to the Society's exhibition. If they would generally enter specimens of their manufactures, it would manifest a laudable zeal for the honor of our county, and add to the interest of the show, and they may be assured that their goods would receive the favorable notice of the Committee.

The Committee have awarded the following premiums and gratuities, viz.

To Mrs. Mary Pettingill, of Newbury, for best Carpeting, yard wide, the 1st premium, 5 dollars.

To Mrs. Susan Kimball, of Boxford, 2d premium, 3 dollars.

To Mrs. Peter Parker, of Bradford, for the best stair Carpeting, the 1st premium, 3 dollars.

To Mary Ann Davenport, of Newburyport, for a handsome Hearth Rug, 1st premium, 3 dollars.

To Mrs. Ann Dole, of West Newbury, 2d premium, 2 dollars.

To Messrs. William & Ebenezer Sutton, for a very good piece of Flannel, 1st premium, 4 dollars.

To Mrs. Betsey Jaques, of Newbury, for 4 pairs of excellent Worsted Hose, 2 dollars.

To Mrs. Judith Colby, of West Newbury, aged 84 years, for 4 pairs Woolen half Hose, 1 dollar.

To Mrs. Susan Kimball, of Boxford, for linen Cloth, the 2d premium, 2 dollars.

To Miss Sarah Johnson, of Andover, for a Counterpane, the 1st premium, 4 dollars.

To Miss Ruth H. Brown, of Rowley, 2d premium, 2 dollars.

To Miss Mary L. Brown, of Newburyport, aged 13 years, for an elegant lace Cap, 3 dollars.

To Miss Sarah D. Smith, of West Newbury, for a wrought lace Veil, 2 dollars.

To Miss Susan H. Hodge, of Newburyport, for the best specimens of ingenuity and industry exhibited by a child under 12 years of age, being a Bead bag and purse, the 1st premium, 3 dollars.

To Sarah Carey Brown, of Newburyport, aged 11 years, for a bag and sampler, 2 dollars.

To Mr. Charles H. Coffin, of Newburyport, for imitation shell Combs elegantly wrought, a gratuity of, 3 dollars.

To William Tyler, Jr. of Boxford, for a pair of Ladies walking Shoes, a gratuity of, 1 dollar.

To Charles Fields, of Rowley, for highly finished Calf Skins, 2 dollars.

To John Kimball for do, 1 dollar.

To John Kimball, of Rowley, for highly finished chaise leather, 1 dollar.

To same for Buffed Horse hide, 1 dollar.

To William Blackburn, of Boxford, for an excellent sample of wick yarn, 1 dollar.

To Miss Mary A. Burnham, of Ipswich, for the best specimen of milk-weed manufactured, 1 dollar.

To Miss Frances C. Crosby, of Amesbury, in her 8th year, for 60 yards straw braid, 2 dollars.

To Miss Sarah S. Adams, Rowley, aged 9 years, for a lace cap and handkerchief, 2 dollars.

To Lois E. Kimball, of Ipswich, in her 6th year, for a gentleman's collar and a lady's cap, 1 dollar.

To Mrs. Hector Coffin, of Newbury, for a pair of excellent thread gloves, "knit by her while riding in a chaise," 1 dollar.

To Abigail F. Barker, of Andover, aged 9 years, for various specimens of ingenuity in bead and needle work, 1 dollar.

To Margaret Smith, of Newburyport, for a bead bag, 1 dollar.

To Misses Mary and Lois C. Lord, of Ipswich, for a very ingenious paper basket, 1 dollar.

To Miss Lucretia H. Milton, of Newburyport, for bead work, 1 dollar.

To Miss Abigail L. Davis, of Newburyport, do, 1 dollar.

To Miss Mary A. Burnham, of Ipswich, for a beautiful vandyke, made from the feathers of the Guinea hen, 2 dollars.

To Miss Lucy J. Moseley, of Newburyport, for beautiful lamp mats and stands, 1 dollar.

To Mrs. Mary Kimball, for a sample of linen table cloth, 1 dollar.

To Mrs. Bishop, of Newburyport, for a very fine pair of Merino Hose, 1 dollar.

To Miss Mary B. Cornell, of Newbury, 67 years old, for a quilt, 1 dollar.

To Thomas Dole, of Newbury, a man deprived of one arm, for an ingenious device attached to a scythe and an axe by which he could use those tools, 1 dollar.

There were many other articles of utility and taste, and many specimens of youthful ingenuity and industry, which the Committee cannot particularly enumerate, but which claim their commendation.

By order of the Committee, JAMES H. DUNCAN.

Rowley, Sept. 26th, 1833.

V. ON CIDER.

The Committee on Cider, report, that four gentlemen appeared as competitors for the premiums offered by the Society, for Cider, to wit :—

Amos Kimball, of Boxford,
Harrison B. Spofford, of Rowley,
Jonathan Ilsley, of West Newbury, and
William Tyler of Boxford.

The cider exhibited by Mr Kimball was of a high order of excellence. It was clear, sprightly, of good color and of excellent flavor. Mr Kimball furnished the committee with a particular statement of the manner of making and preserving the cider. By this statement it appears the cider was made about the 20th Nov. 1832, with eight or nine other barrels, all of which were much alike, and that it is the pure juice of the apple, without any other mixture or ingredient whatever. The fruit was well assorted and consisted principally of the green sweeting, the baldwin and the pippin apples,—and was ground the night before pressing. Particular care was taken in straining the cider, that the straw should be clean and closely packed. The cider remained out of the cellar three or four days after it was made, the weather not being very cold. It was put into new strong casks and but little air admitted during the winter. It was drawn off the first of April and put into the same casks after they had been cleansed with water, and a brimstone match. All the cider was sold with the exception of two barrels in June and July. The barrel presented for premium was wrapped in woolen blankets by the middle of June. About the middle of August Mr Kimball sold the barrel of cider not wrapped in blankets, and at this time there was no perceptible difference between the two barrels, except that the one wrapped in blankets was colder than the other. The cellar of Mr Kimball is of a dry sandy nature, and by the first of July generally gets warm, but he is not sure that cider changes any sooner in such a cellar. Mr Kimball remarks, that although there may be a difference in cellars in regard to keeping cider, yet his own experience has

taught him that the grand essentials, in making good cider, are good fruit well assorted and in a proper state of ripeness, with clean sweet casks and proper attention to the admission of air.

The above statement of Mr Kimball probably contains the great secret of making and preparing good cider. In the first place the fruit must be good and well assorted. In the next place great cleanliness should be used in making the cider, and every thing which comes in contact with the cider should be sweet and clean. In the third place it should be well strained from the pumice and put into clean, strong casks. In the fourth place particular care should be taken, that as little air as possible, consistent with the preservation of the cask, should be admitted. It may be doubted by some, whether the racking off the cider in the spring was of any benefit, as they hold to the opinion that cider keeps as well to remain undisturbed upon the lees. Of this, however, experience is the best school master. We might perhaps have supposed that the wrapping the cask in woolen blankets had a powerful influence upon the liquor in the cask, had not the statement informed us, that a cask under all other circumstances alike, kept equally well. The only difference being this, that at the middle of August the cider in the cask wrapped in woolen was colder than the other. The cellar of Mr Kimball would not generally be considered as favorable for the preservation of cider. It is of a dry sandy nature, and by the first of July, generally gets warm. But perhaps Mr Kimball has laid down the best mode which is drawn from his own experience—good fruit well assorted, and in a proper state of ripeness, with clean sweet casks, and a proper attention to the admission of air. The Committee adjudge the first premium of fifteen dollars to Mr Kimball, and they have purchased the cider for ten dollars to be used at the dinner of the Society. The cider produced by the other gentlemen was in no respect extraordinary, and not coming up to the standard prescribed by the Society, of superior quality, the Committee did not feel themselves authorized to award any premium.

E. Moseley, *per order.*

AMOS KIMBALL'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Cider:

Gentlemen—The barrel of cider which I offer, was made about the 20th November last, with eight or nine others, all of which have been much alike, and contain nothing but the pure juice of the apple ; no ingredient whatever has been applied. The fruit was well assorted, and consisted principally of the green sweeting, the baldwin and the pippin apples, after the better quality had been selected for winter. The fruit was not all of it so ripe as would have been desired, and was mostly ground the night before pressing. Particular care was taken in regard to straining the cider, that the straw was sweet and closely packed, for it was strained through straw. The cider remained out of the cellar three or four days after making, the weather not being very cold. It was put into new strong casks, and but little air admitted during the winter. It was drawn off the first of April, and put into the same casks after they had been cleansed with water and a brimstone match. I sold all but two barrels in July and June. The barrel now presented, was by the middle of June wrapped in woolen blankets.

At the middle of August, when I sold the other barrel, I found no perceptible difference between the two barrels except the one wrapped in blankets was colder than the other. My cellar is of a dry sandy nature, and by the first of July generally gets warm, but don't know that cider changes any sooner in consequence thereof.

Although there may be a difference in cellars in regard to keeping cider, still to my mind, and from the experience I have had in making cider, the grand essentials are, good fruit well assorted, and in a proper state of ripeness, with clean sweet casks, and a proper attention to admitting air.

I am gentlemen with much respect, yours &c.

AMOS KIMBALL.

Boxford, Sept. 26. 1833.

IV. ON POTATOES.

The Committee appointed to award premiums on the best conducted experiments in raising potatoes, have attended to that service, and report:

There was but one specimen presented for their examination.

They have awarded the society's highest premium, of seven dollars, to Messrs. Enoch and Silas Follansbee, of West Newbury, for the best conducted experiment in raising potatoes from the seeds of the apple, they being of the second year's growth, and in quantity as required by the rules of the society.

They also recommend a gratuity of two dollars to Mr Ahira Putnam of Danvers, for a specimen of potatoes raised from one seed, the first year being forty in number.

DANIEL PUTNAM for the Committee.

New Rowley, Sept 27th, 1833.

To the Committee of the Essex Agricultural Society on Potatoes:

Gentlemen—We present for your examination the result of an experiment in raising potatoes from the seed.

In 1832, we planted eight seed, and have kept the product of each seed separate.

In 1833, we planted the same, and the parcels exhibited are the result:—

No. 1, 2, and 3, yielded well.

No. 4 and 5, being early, produced not so well.

No. 6 appears to be a very early, promising kind.

No. 7 and 8 appear to be worthless.

E. & S. FOLLANSBEE.

West Newbury, Sept. 26, 1833.

VII. ON PLOUGHING—DOUBLE TEAMS.

The Committee on ploughing with double teams report, That in their opinion one of the principal objects of a ploughing match is, to bring together a variety of ploughs, and those kinds con-

sidered by competitors the best, giving an opportunity to all to compare side by side the several ploughs, and the work done by each. And after making a careful examination, impartially, any farmer may determine pretty correctly which plough is best constructed to turn the furrows upon his farm. This opportunity if properly improved and applied is of great service to the practical farmer—inasmuch as good ploughing is necessary to secure a good crop. The Committee are confident, from the interest taken in this part of our show, that it is no longer considered a boyish play.

But that it is viewed in its true light, a means of information which may be, and which is reduced to practice.

The lot of land selected by the committee of arrangements, is of a thin, sandy loam, has been pastured for many years with sheep, and very little vegetable matter remained upon the surface of the sward, of course all kinds of ploughs run free from clogging. In the opinion of the committee, upon pasture ground of this description, if the coulter to the plough is sharp, very little is gained by a cutter, although the same plough upon stiff soil, thickly coated with grass, would not make good work without it.

The Committee here would remark that they do not consider the lot ploughed a fair sample of the ground usually broken up in the county, and would recommend to all interested to consider that ploughs may make good work here which would not go at all in such ground as is broken up upon most farms. We feel justified in making these remarks from actual observation at the last ploughing match.

Ten lands of thirty-two rods each, were stricken out, all of which were taken up by the competitors as follows, viz:

Lot No. 1. By Samuel Northend, Teamster, and Wm. Williams, Ploughman, ploughed thirty furrows in fifty-one minutes.

Lot No. 2. By Benjamin Savory, Teamster, and Wm. Bradley, Ploughman, ploughed 28 furrows in forty-three minutes.

Lot No. 3. By Silas Moulton, Teamster, and Joseph Goodridge, Ploughman, ploughed 31 furrows in fifty minutes.

Lot No. 4. Nathan Hurd, Teamster, and Moses Pettengill, Ploughman, 29 furrows in forty-eight minutes.

Lot No. 5. Joel Richardson, Teamster, and Ralph H. Chandler, Ploughman, 28 furrows in forty-two minutes.

Lot No. 6. John N. Kent, Teamster, and Joel Kent, Ploughman, 33 furrows in fifty seven minutes.

Lot No. 7. Richard T. Jaques, Teamster, and Richard Jaques, Ploughman, 26 furrows in forty-four minutes.

Lot No. 8. Daniel M. Spofford, Teamster, and Paul Dole, Ploughman, 28 furrows in thirty-seven minutes.

Lot No. 9. Thos. Reley, jr., Teamster, and Richard Heath, Ploughman, 27 furrows in forty-one minutes.

Lot No. 10. Liphe Adams, Teamster, and Nathaniel Rogers, Ploughman, 30 furrows in forty-nine minutes.

The Committee would observe that the work was all remarkably well done. And several of the lots so nearly equal that the Committee found great difficulty in awarding the premiums. But after a minute examination they unanimously agreed to award the whole premiums as follows, viz :

The first premium of twelve dollars, to lot number three, ploughed by Silas Moulton and Joseph Goodridge, of W. Newbury.

The second premium of ten dollars, to lot number eight, ploughed by Daniel M. Spofford and Paul Dole, of Rowley.

The third premium of eight dollars, to lot number five, ploughed by Joel Richardson and Ralph H. Chandler, of Andover.

The fourth premium of six dollars, to lot number four, ploughed by Moses Pettingell and Nathan Hurd, of Topsfield.

Per order.

MOSES NEWHALL, Chairman.

VIII. ON PLOUGHING—SINGLE TEAMS.

The Committee on ploughing with one yoke of oxen, consisting of Daniel Adams 3d, of Newbury, Erastus Ware, of Salem, Amos Kimball, of Boxford, and John Northend of Byfield, beg leave to report: that nine teams were entered, but on calling the *roll* on the ground, eight only appeared. The land was laid

out in lots of about 34 rods each, and drawn for by each ploughman, and the work performed as follows: viz.

No. 1. Ezekiel Peasley, of Middleton, said Peasley ploughman and driver, work done in 1 hour 13 minutes, with 32 furrows. Plough, Pike's of Danvers.

No. 2. George W. Winslow, of Danvers, said Winslow ploughman and driver, work done in 1 hour 32 minutes, with 34 furrows. Plough, Pike's of Danvers.

No. 3. George Towne, of Danvers, Andrew Curtis driver, work done in 55 minutes, with 29 furrows. Plough, Pike's of Danvers.

No. 4. Robert Jewett, of Rowley, said Jewett ploughman and driver, work done in 1 hour 7 minutes, with 34 furrows. Plough, *Howard's* improved cast iron.

No. 5. Paul Bayley, of West Newbury, said Bayley ploughman and driver, work done in 1 hour 8 minutes, with 29 furrows, with cast iron side hill plough.

No. 6. Uriah Bayley, of West Newbury, Jacob Earl ploughman and driver, work done in 1 hour 19 minutes, with 33 furrows, with cast iron side hill plough.

No. 7. Jonathan Kimball, of Bradford, said Kimball ploughman and driver, work done in 1 hour 25 minutes, with 35 furrows.

No. 8. John Brooklebank, of Rowley, his son Jeremiah, a lad 14 years old, ploughman and driver, work done in 1 hour 20 minutes, with 34 furrows. Plough, Howard's improved cast Iron.

The Committee think the work was well done considering the selection of the land and quality of the soil, it being of a gravelly loam and for many years improved as a Pasture. After very close inspection of all the work performed, they were unanimous in awarding the premiums as follows: viz.

1st premium of $10 to Robert Jewett of Rowley, lot No. 4.
2d " " $8 to John Brooklebank of Rowley, " " 8.
3d " " $6 to Jona. Kimball of Bradford, " " 7.
4th " " $4 to Geo. W. Winslow, of Danvers, " " 2.

It will be perceived that the ploughs of the Messrs. Bayleys were those commonly called Side Hill Ploughs, made expressly for the purpose of of ploughing on the sides of hills, for which purpose your Committee would recommend them as decidedly superior to any now in use. They would however observe that the ploughing done with them this day was very fair, and perhaps on some lands would be preferable to other ploughs, as by the shift of the furrow board, the furrows are all turned one way, thereby leaving the land level without any open furrows; but your Committee think that much improvement may be made on those ploughs, and they are happy to state that Mr. *Howard* of *Hingham* was present and saw their operation, and suggested several improvements which he engaged to have made at his establishment, so that we feel confident that another year we shall have ploughs of this kind very much superior to those now in use.

Your Committee cannot close their report without calling the attention of their brother farmers to the use of the *improved Cast Iron Ploughs*, perhaps they will not in all cases lay the furrow slice so perfectly flat and level as some of the old kind, yet the land is left in much better state to receive the seed, and the very small expense in keeping them in repair compared with the wrought iron, induces your Committee unanimously to recommend them to the farmers of Essex as much the cheapest and best ploughs for general use.

All which is respectfully submitted,

DANIEL ADAMS 3d, *for the Committee.*

IX. ON THE CULTIVATION OF THE WHITE MULBERRY TREE &c.

The Committee on the cultivation of the white mulberry trees, the culture of Silk, and on forest trees, submit the following report:—

Your Committee have been pleased to find that the subject of mulberry trees and the culture of Silk, continues to engage the attention of a number of persons in this county. The experiments which have already been made fully warrant the o-

pinion that our climate is not unfavourable to the culture of silk, and that no great obstacles exist in the successful prosecution of this important branch of domestic industry.

The applications for the premiums of this Society, offered for the several subjects committed to your Committee, have been four in number, viz :—

Gardner B. Perry, of Bradford.
Samuel Eaton, of Methuen.
Thomas Bailey, of Amesbury.
Abel Nichols, of Danvers.

Mr. Perry offered for premium a nursery of white mulberry trees of 3 years growth, about 5500 in number, transplanted with much care, in the spring of the second year, and set out in rows about two feet apart. Their average height is about five and a half feet, and many of them seven and eight feet. This nursery appeared exceedingly well, and it is the opinion of Mr. Perry that the trees are of a superior quality. As the premiums of the society are offered for those nurseries only not exceeding two years growth, the Committee do not feel themselves at liberty to award any premium for this nursery.

Mr. Perry had another nursery of two years growth, the produce of three ounces of seed, and containing about two thousand trees, the largest about three feet in height and the smallest about two feet.

About 150 rods are set out with mulberry trees for a hedge or fence from two to four feet apart, mostly of two and three years growth. The greater part were set out the past year, but some of them were set out the present year. For the above nursery of two years growth the Committee award to Mr. Perry the second premium of fifteen dollars.

Mr. Perry also exhibited to your Committee for premium about 400 sugar maple trees, transplanted from the forest the last spring and on an average about 8 or 9 feet high. About 170 are set by the wall on the borders of a field at the distance of one rod from each other. One hundred are set in a lot in orchard form, two rods apart one way and one rod the other way.

There are ten by the highway near the wall, and designed as ornamental trees. The residue being the smaller ones,with a parcel of seedlings are in a nursery.

The Committee think very favourably of this experiment of Mr. Perry to introduce the cultivation of the sugar maple. It is a tree very valuable for timber, unusually free from insects and beautiful as an ornamental tree, and in many parts of our country it is esteemed highly valuable on account of the sugar which is manufactured from its sap. On referring to the list of premiums offered by the Society, for forest trees, it does not appear that the sugar maple is among those enumerated, nor is the number of trees set out by Mr. Perry so large as prescribed by the Society for the trees particularly specified. Your Committee are however of opinion that Mr. Perry is entitled to much credit for his attempt to cultivate this tree, and they would submit for the consideration of the trustees, whether Mr. Perry may not be considered as equitably entitled to some gratuity from the trustees for his services.

Samuel Eaton exhibited to your Committee a plantation of white mulberry trees occupying about three acres of ground and containing about 4000 trees. They are set in rows twelve feet apart and two feet apart in the rows. About 3300 of the trees are of five years growth, two in the nursery and three where they now stand, and seven or eight hundred are of four years growth, two in the nursery and two where they now stand. The trees appeared thrifty and well, but the Committee regret that Mr. Eaton should have neglected pruning them the present year. The Committee recommend the second premium of twenty dollars to Mr. Eaton for his plantation.

Mr Eaton also exhibited to your committee about 8000 cocoons, weighing about 23 pounds, which he had obtained from his worms the present season. The leaves were gathered and fed out by two boys, one eight and the other thirteen years old, assisted by their mother in the cleansing. The eggs were hatched during the first week in June, and each day's hatching kept in separate stands. During the two first stages they were cleaned

once in three or four days ; but during the last stage every other day. It appears that Mr Eaton had to encounter many difficulties. The worms were kept in an out house without windows or a floor. Light and air were admitted by the doors, which were kept open during the day in dry weather. In consequence of the cold damp place in which the worms were kept, and the unfavourable state of the weather during their growth, they were about forty two days in coming to maturity, a much longer period than they required the last year. The committee award the second premium of ten dollars to Mr Currier for the cocoons.

Thomas Bailey called the attention of your Committee to a nursery of white mulberry trees in two pieces on about 70 rods of land, and containing about 25,000 trees. The trees are from one and an half to six feet in height, the average being about three feet. The trees are in their second year's growth, have been well attended and appear exceedingly well. Mr Bailey would be, unquestionably, entitled to a premium for this nursery had he not made an application last year for a premium for the same nursery, which was awarded to him. The Committee were of opinion that he could not be a competitor for another premium for the same nursery, unless the trees should be transplanted to a plantation. The Committee request the opinion of the Trustees whether they have judged rightly in this respect.

Mr. Bailey has also the present year produced 20,000 cocoons from his silk worms, weighing sixty pounds. Of the best cocoons selected 208 would weigh a pound, the moth not killed, but the average was about 330 to the pound. In the first age of the worm the labor in getting leaves and feeding them was about half an hour each day. In the last or fifth age the labor was from two to three hours each day. The worms were from 32 to 40 days before they formed their cocoons. The Committee are of opinion that Mr Bailey is entitled to the first premium of fifteen dollars for his cocoons.

Abel Nichols requested the Committee to examine his nursery

of white mulberry trees of two years growth and containing in the whole about 30,000 trees. About 8,000 were transplanted in the spring of 1833, and occupy about 3-4 of an acre of ground, in rows six feet apart. Mr Nichols, at the the time of transplanting his trees, in most instances cut off the tap root, but a portion of them were transplanted without taking off any of the bottom roots. The Committee discovered a plain difference in favor of those which had the tap roots taken off. They appeared more firmly set in the ground and the lateral roots appeared to have taken a firmer hold than those which had the tap root remaining. The Committee consider this nursery as well managed, thrifty, and kept free of weeds, and they think the owner is entitled to the first premium of twenty dollars, offered by the Society for nurseries not exceeding two years growth.

The Committee cannot close the report without expressing a strong desire that the subject of the culture of silk may more generally engage the attention of the people of this county. The nurseries of white mulberry trees in the county are already sufficient to furnish plantations of very great extent, and the experiments already made hold out the strongest encouragement to persevere in this business. The experiments of Messrs. Eaton and Bailey contained in this report show with what little labour the worms may be fed. In the case of Mr. Eaton, two children gathered the leaves, and in the case of Mr. Bailey it required but half an hour daily for a person to gather the leaves in the first stage, and feed them, and in the last stage from two to three hours each day. In the great Laboratories of Europe we find that great care is taken to keep the atmosphere of the rooms where the worms are kept, in a certain temperature, by the use of stoves, thermometers &c. and the dampness is regulated by the Hydrometer, and every precaution is used to secure the worms from disease. Yet in the case of Mr. Eaton we find he succeeded in obtaining his cocoons in a shed without floor or windows, and with no artificial heat to temper the atmosphere, nothing to regulate or carry off the dampness, and all this in a season peculiarly unfavourable. Experiments already made fully establish

the fact that a given number of worms in our climate consume almost precisely the same quantity of leaves as in the most successful silk countries, that is, every two worms will require 50 pounds of leaves, and that the weight of cocoons and the quality and quantity of silk obtained will bear a very favourable comparison. There is no mystery in the culture of silk. The whole process from the rearing of the mulberry tree to the production of silk is simple and easy, and our farmers by turning their care and attention to this business would obtain a much more profitable reward than in the usual course of field husbandry.

EBENEZER MOSELEY, per order.

ABEL NICHOLS'S STATEMENT.

To the Committee of the Essex Agricultural Society, on the cultivation of Mulberry Trees, &c.

Having entered a claim for a premium for my nursery of *white mulberry trees*, which is submitted to your examination, I now present you with the following statement of the preparation of the ground, the planting and management of the same, with an estimate of the expense attending these operations. The ground chosen for this nursery is situated on the southern side of a large hill, formed like the Topsfield hills and many others in the county, not of ledges of rocks covered with vegetable mould, but of rolled stones of every size mixed with a hard clayey gravel.—This ground was of course originally very rocky—but having been cultivated from the first settlement of the country, about six inches of the surface is now free from stones. This having been in grass for several years, was, in the spring of 1832, well turned over with the plough. On the space occupied by the seedlings this year, *twenty-one* square rods, about six feet of manure was spread and the new surface to the depth of three or four inches, leaving the sward undisturbed beneath, was well pulverized with a harrow. Nine ounces of white mulberry seed was now sown in drills on one half of the ground, these were

three feet apart and on the other half one and a half feet. Between the rows, which were three feet apart, a row of carro ts were sown which produced a small crop.

The expense of management the first season is estimated as follows:—

Ploughing the grass ground,	$1 00
Manure 6 feet, and harrowing,	1 50
9 ounces white mulberry seed,	3 75
Labour of sowing,	1 00
Hoeing and weeding four times,	2 00
	$9 25

In the spring of 1833 eight thousand trees were transplanted to about three fourths of an acre of the ground adjoining the seedling nursery, which had been been broken up at the same time, and cultivated with indian corn in 1832. About six cords of manure was spread on this ground and ploughed in. The trees were set in rows 6 feet apart, about 8 inches from each other in the rows. Between each of the rows corn was planted.

Expense estimated as follows:—

Ploughing,	$1 00
Transplanting the 8,000 trees,	2 00
Extra hoeing on account of the trees,	2 00
Hoeing and weeding the 22,000 trees remaining in the original nursery,	2 00
	$7 00

Respectfully yours,

ABEL NICHOLS.

N. B. Several thousand worms were fed on the leaves of the nursery and a row of trees now of three years growth set for a hedge on one side of the nursery; the cocoons formed are heavy and apparently good. No particular estimate of the value of the labor expended on them has been made, the object of rearing them being neither present profit nor the expectation of obtaining a premium for them, but merely to become acquainted with the management of silk worms against the time when my trees

will afford sufficient food to make it an object to rear them for profit.

THOMAS BAILEY'S STATEMENT.

To the Committee of the Essex Agricultural Society, on the cultivation of Mulberry Trees, &c.

Gentlemen—The following I submit for your consideration, viz: A nursery of white mulberry trees, consisting of more than 25,000, standing on two pieces of land in Amesbury, containing 70 rods. The trees are of various heights from 1 1-2, 2, 3, 4, 5 and 6 feet. I think upon an average they will exceed 3 feet—have hoed them this season four times—cannot tell exactly the amount of labour done on them—perhaps it would not be far from 6 days—said trees are in the second year's growth.

Also, I have about 20,000 cocoons produced from the silk worms the present year, weighing 60 lbs, the moth not stifled.—I selected some of the best cocoons; when weighed, the number did not exceed 208 to the pound, the moth not killed. The average nnmber I raised for a pound is about 330. In the first age of the worms the labor spent in gathering leaves and feeding was about half an hour each day—in the last or fifth age it was from 2 to 3 hours each day. The worms were from 32 to 40 days before they formed the cocoons.

Very respectfully yours,

THOMAS BAILEY.

Amesbury, Sept. 26th, 1833.

GARDNER B. PERRY'S STATEMENT.

EBENEZER MOSELEY, Esq. *Chairman of the Committee on Mulberry and Forest Trees.*

Dear Sir,—The trees to which I wish to call the attention of the Committee, are, first:

A nursery of white mulberry trees believed to be of a superior quality, uf three years growth. Those of three years, con-

sisting of about 5,500, were with a very few exceptions transplanted in the spring of the second year, their roots trimmed and formed, and set out in rows about 2 feet apart, half foot distance from each other in the rows. Owing to a deficiency of leaves last year in this county, I suffered them to be very closely stripped to supply some friends in this and neighboring towns.— Their growth I think was in some degree retarded on this account, but as they became unusually large the first year and have had no leaves taken from them this, they have become as large as a truly skilful arborist would wish, considering their age. Roots and not the top of every tree should receive the principal attention during the first year. Their average height is about 5 1-2 feet, many of them are 7 or 8. They have been cultivated entirely with the hoe. I cannot think that at the usual distance at which they are set in nurseries, the plough can be used, or shovel doing injury to the roots, certainly not after they have obtained much length.

Second, a nursery of trees two years old. These are the produce of three ounces of seed, but are by no means as numerous as those usually obtained from the like quantity, and there is a great disproportion in the size of the trees, a circumstance which I cannot yet well account for, though I think it not unlikely as their characters become now distinctly developed, they will be found of different species. For it is a fact not sufficiently known by those who have given forms to cultivate the mulberry, that there are a variety of the kinds, possessing very different capacities in regard to the nourishment afforded the worm and the silk produced by those fed upon them. The Committee I am sure will never receive it as an improper suggestion, if I observe that this circumstance may well on some future year receive a particular notice from them. These trees do not I think exceed two thousand. The largest about two feet, the smallest about one foot in height.

The next item I will mention is, 150 rods of mulberry trees set out for the purpose of hedges or fences. These were set out mostly the last, but some of them this year. They are in different parts put at different distances. Some four and others

less than two feet apart. Time must determine what is the most proper distance. I have no doubt of their capacity to form good, substantial and durable fences, yielding in their leaves a yearly income instead of calling for additional expense as is the case with most fences. The trees which I had set out were mostly those of two and three years growth, some few were of four, and I apprehend in four or five years, when the soil is suitable, they will afford protection against cattle.

The last particular to which I would refer you, is a number of sugar maple trees, in all about 400. Most of them were procured in New Hampshire the last spring, in April, and are upon an average 8 or 9 feet high, some few are 12 or more, while others are less than the first mentioned sum. 170 or perhaps a few more of them are set by the wall on the borders of my fields, a rod from each other. 100 are set in a lot in orchard form, two rods apart one way and one rod the other. 10 are by the wall in the public highway, designed as ornamental trees. The remainder being the smaller ones, together with a parcel of seedlings of two years, are in the nursery. They have done as well as could rationally be expected. The largest proportion of them having lived, though the loss of some for two and others for four feet have died. Some have perished to the roots from which they have however thrown out new shoots which promise well. The number of those entirely lost cannot be accurately ascertained this year. I apprehend however from present appearances it will be small.

It would beyond question have been better to have cut the tops off nearly to the ground before putting out, an observation which holds true I apprehend in relation to most trees taken from the forest, except when they can receive special attention, be often watered, and in some way defended from the direct influence of the sun. The bark of trees taken out of a thick grove is not thick enough nor hard enough to bear the full force of our summer sun without some protection. It may require a little resolution, to cut off the top of a handsome tree when about to transplant it, and it may require some experience to bring a person to believe that this is the readiest way to get a hand-

some trunk with strong and spreading branches. Yet such I apprehend is the case and that the sooner the public become acquainted with and convinced of this fact, the better for all who have any thing to do in this concern.

I will make a single remark, which escaped me in its proper place, which is, that from my own experience and observation made upon trees, belonging to others, I have become fully persuaded that no leaves should be taken from Mulberry trees farther than is done by necessary pruning till they are all of four years of age. The trees may survive a considerable stripping, but in the end will be found to be injured.

With much respect, yours,

GARDNER B. PERRY.

P. S. I was not a little disappointed to learn from you, though I ought to have been acquainted with the fact, that premiums on mulberry trees were restricted to those not over two years. For Mr. Berbank who does my work, as well as myself, had thought much of the nursery referred to in the above account, as possessing many excellencies above any we had raised before.

Those of two years old, though perhaps as good as the generality of trees of their age, have nothing very *peculiar* to recommend them, and had I been acquainted with the above circumstance I should not have thought it worth while to call the attention of the committee to them. And though I have concluded not to strike out the notice given of them on account of some observations connected with it, I do not now present them for premium. I will observe however that my attention to them has been entirely *experimental* and therefore attended with very considerable increase of expense, and hope in the end to come to some results which may be useful to the community as well as myself.

Respectfully,

G. B. PERRY.

Bradford, Oct. 1st, 1833.

SAMUEL EATON'S STATEMENT.

To the Committee on White Mulberry Trees:

Gentlemen,—My white mulberry plantation occupies about three acres of ground and contains about four thousand trees; They are set in hedges twelve feet apart and two feet in the hedges, a part of the land had been planted one year with potatoes manured in the hill, and a part were set on mostly ploughed sward, the trenches were made by passing a plough four or five times in the same track till they were sufficiently deep to receive the roots, and the earth carefully filled in with the hand and hoe, and the spaces planted with potatoes and beans, and hoed twice the first season; the second season the spaces were again ploughed, manured, and planted with potatoes, and hoed as the first; the third, or present, the spaces have been occupied in the same way, but the trees have not been hoed or cleared of weeds.—From two to three hundred bushels of potatoes have been raised yearly on the ground, besides a quantity of peas and beans for family use. About thirty three hundred of the trees are of five years growth, two in the nursery and three where they now stand, and about 7 or eight hundred are of four years growth from the seed, two in the nursery and two where they now stand.—Those trees planted on the sward land did quite as well as those planted on that which had been previously planted with potatoes, although they were not quite so promising at first. I would remark here that the distance of two feet in the hedges is less than it should be, and if every other tree were removed so as to leave four feet, I think the trees would afford more leaves than they now do, and the distance of twelve feet between the hedges is just about such as to give the trees room to grow and to allow of ploughing and passing between them to the best advantage,

I have fed about eight thousand worms the present season from leaves gathered from my tress (and I might have kept a much larger number if I had been prepared for it,) which have made about twenty three pounds of cocoons, averaging about three hundred to the pound. The leaves were gathered and fed out by two little boys, one eight the other thirteen, assisted by

their mother in the cleansing. The eggs were hatched during the first week in June, and each day's hatching kept on separate stands; during the two first stages they were cleansed once in three or four days, but during the last every other day. They were kept in an out house in which were no windows and without a floor; light and air were admitted by the doors which were kept open during the day in dry weather, and owing probably to the cool damp place in which they were kept, and to the unfavorable state of the weather during their growth, they were about forty-two days in coming to maturity, a much longer period than they required last year.

I am very respectfully,

Your obedient Servant,

SAMUEL EATON.

Methuen, Nov. 1st, 1833.

X. ON ANIMALS—BULLS.

The Committee of the Essex Agricultural Society, appointed to examine the Bulls entered for premiums, have attended to that duty and report:—

That there were only four animals entered that came within the description of those for which premiums were offered, to wit:

One by Gideon Currier, of Newbury, 3 years old.

One by Harrison B. Spofford, of Rowley, 3 years old.

One by Hector Coffin, of Newbury, 3 years old—3-4 Durham short horned breed.

One by Samuel Andrews, of Boxford, 2 years old.

The Committee were pleased with these animals, and think them of good quality—and recommend that the premiums be awarded as follows—

First,	to Gideon Currier,	$15
Second,	to Harrison B. Spofford,	$10
Third,	to Hector Coffin,	$5

There were also exhibited four calves, between 4 and 6 months old.

One by Moses Newell of West Newbury.

One by John Foster, Jr. of Andover.

One by John Ross of Methuen.

One by Bailey Loring of Andover.

These calves were all promising animals, and worthy of exhibition.

The Committee think that Mr. Loring's calf is a very superior animal, and they recommend that there be given for him a gratuity of three dollars.

Per order,

JOHN ADAMS, *Chairman.*

New Rowley, Sept. 26, 1833.

HECTOR COFFIN'S STATEMENT.

To Messrs. John Adams, William Thurlow and William Spofford, the Committee of the Essex Agricultural Society, on Bulls :—

Gentlemen,—I present for premium my bull "Young Bolivar," three years old, three-quarters Durham Short Horned breed.

Was sired by the imported bull Bolivar, of the purest English pedigree, going back on the herd books to Hubbark, the first animal on those books. Dam out of a first rate native cow, sired by the imported bull, Cœlebs, of equally pure English pedigree.

Both dam and grand dam are now in this state, are great milkers, giving their sixteen and eighteen quarts per day, through the grass season, as their owners declare.

To say, "Young Bolivar,"

1-4 Native,

1-4 Cœlebs,

1-2 Bolivar, or three quarters Improved

Durham short horn breed, of first blood and from first rate milking dams.

His sire Bolivar, sold at public auction, June 16th, 1830, for $555 and was resold before going off the ground for 595 dollars cash.

His calves are good, several of which I am raising. He is good tempered, never having offered to injure person or animal. He has never been grained, or eaten any kind of provender; and has been kept on fresh meadow, and salt hay, in the winter, and common pasturage in the summer, till this season, when he has been kept in the barn, on hay of a poor kind, grass and some corn stalks, &c.

Submitted by your obedient servant,

HECTOR COFFIN.

Rock Farm, Newbury, Sept. 26th, 1833.

SWINE.

The Committee appointed to examine and award premiums on Swine, have attended to the duty assigned them, and would report:—

That there were but four competitors for premiums on Swine. The quality of the animals exhibited, was on the whole, no better than ordinary.

Your Committee would award the first premium of $5 to Mr. Ralph Dole, of Rowley, for the best boar pig, 5 months old.

Second premium to Henry Mowatt of Newbury, for a boar pig, 4 months 11 days old, $3.

For the best litter of weaned pigs, five in number and 5 months old, your Committee would award the first premium to Uriah Bailey, of West Newbury, $6.

For the second best do. 5 in number 2 months and 23 days old, belonging to James Stevens, Jr. of Andover, the second premium of $3.

There were exhibited, a fine fatted hog, 16 months old, by Mighill Spofford, of Rowley, also a barrow pig 5 months old,

and weighing 172 lbs. by Charles H. Dunbar, of Haverhill.—Your Committee did not consider that these last came within the limits of premiums offered by the Society.

By order of the Committee,

THOMAS PAYSON.

Rowley, Sept. 26th, 1833.

STEERS.

The Committe appointed to examine and report upon Oxen and Steers exhibited at the cattle show, this day, ask leave to report:—

There were offered for premium 5 pairs 3 years old Steers, and 4 pairs of 2 years old Steers, all of our native breed of cattle, most of them indicating thrift and care.

Your Committee after due consideration award the premiums as follows, viz:

To Jedediah H. Barker, of Andover, for a very fine and well trained pair of 3 years old Steers, the first premium of, $10.

Your Committee award to Col. Daniel Adams, 3d. of Newbury, for a very handsome pair of 3 years old Steers, the second premium of, $5.

The also award to Harrison B. Spofford, of Rowley, for a handsome pair of 2 years old Steers, the second premium of, $3.

Your Committee award to Capt. Hector Coffin, of Newbury, for a well trained and a good disciplined pair of 2 years old Steers, the first premium of, $5.

Your Committee were highly gratified at the appearance of all the Steers, generally speaking. There was a very fine pair of 3 years old Steers exhibited by Enoch & Silas Follansbee of West Newbury; one other pair than that for which the premiums were given by Jedediah H. Barker, of Andover, well trained and under good discipline.

There was a very fine pair of 3 years old Steers exhibited by David Severs, of Haverhill, which deserve commendation.

Mr. William Thurlow, of West Newbury, exhibited a very superior pair of 4 years old Oxen, 1 pair of 3 years old Steers, 1 pair of 1 year old Steers.

Mr. Greenleaf Dole, of Boxford, exhibited a very fine pair of 4 years old Oxen.

Harrison B. Spofford exhibited a very fine pair of 4 years old Oxen, but as there were no premiums offered by the Trustees for Oxen, your Committee cannot award any.

There was a pair of 2 years old Steers exhibited by Moses Pettengill, of Topsfield, and a pair of 2 years old Steers by John N. Kent, of Newbury.

Your Committee are of the opinion that our Farmers generally are not particular enough in mating their Steers, and they regret very much that the farmers do not take more pains in accustoming their Steers to the yoke when young, and training them like the soldier that is put under a drill. If this be done, when come to maturity, they would work with much more ease, and would be more likely to obtain premiums.

For the Committee,

SOLOMON LOW.

Rowley, Sept. 26th, 1833.

HORSES.

The Committee on Horses have attended with pleasure to the duties assigned them, and submit the following report:—

The exhibition of these noble animals has been highly satisfactory and pleasing. Your Committee regard the Horse, of all animals subdued and domesticated by the hand of man, as the most useful Regarding him as the most intelligent and generous, employed for various and important purposes. He is our great and indispensable ally in war. His share in the culture of the earth, that first of all human concerns in providing for the sustenance of man and beast. He is of great importance, and his services in all human transactions branch into an innumerable variety. The number this day presented for examination was eighteen. After mature deliberation, your Committee were of the opinion that the first premium of ten dollars should be awarded to Mr. Thomas Marshall, of Newburyport for the Black mare 4 years old presented by him. That the second premium

of eight dollars be awarded to Dr. David Mighill, of Rowley, for his grey horse 4 years old.

That the third premium of six dollars be awarded to Mr. Nathaniel Smith, of Danvers, for his black mare colt three years old.

The fourth premium of four dollars be awarded, to Daniel Hale, Esq. of Byfield, for his large sorrel mare, 4 years old.

JEREMIAH COLMAN, *Chairman.*

Rowley, Sept. 26th, 1833.

XI. ON TURNING IN GREEN CROPS FOR MANURE.

The Committee on Turning in Green Crops for Manure, report:

That there are many different sorts of vegetable substances, when deprived of their living property, by undergoing the proces of decomposition, that soon become proper for the nutrition and support of new plants and fit for being applied as manure.—Their reduction to this state is greatly promoted by their being exposed to the full influence of the air, moisture, and a suitable degree of heat. And it may be remarked that in vegetable productions the changes are less rapid than those of the animal kind, and probably much more varied according to the various states and textures of the particular substances, and it is obvious from numerous facts and circumstances that the more luxuriant and juicy vegetables are much more readily decomposed than such as are dry. Hence it is, that fresh vegetable substances are much more quickly converted to that state of decay which is suitable for supplying vegetable nourishment, than straw, or hay and other dry materials of the same nature. And among substances of the latter description, buck-wheat has been recommended by English and American farmers as the most economical and convenient for this purpose. And the truth of these recommendations has been well illustrated by an experiment recently made of it as a manure by Daniel P. King, Esq. on his farm in Danvers. Mr. King in a written communication made to your Com-

mittee of the last year, dated Sept. 1832, says, "I have this season commenced the experiment of ploughing in a green crop for manure, the details of which, I beg leave to communicate. I have been encouraged to make the attempt by favorable results in turning in Roman wormwood and other weeds, after harvesting crops of rye, and I have been, besides, actuated by a desire of answering, so far as I might be able, the wishes of your Society, which has, for several years, offered a liberal premium for the "most satisfactory experiment of turning in green crops as a manure," and which has never within my knowledge been claimed.

Buckwheat has been recommended by foreign as well as American farmers, as the most economical and convenient plant for this purpose. The cost of seed is trifling, it thrives on sterile ground, requires but a short season for its growth, produces a heavy crop, which, when buried, readily decomposes.

July 10th. One acre of level ground, the soil of which is a sandy loam, almost exhausted, for it had been in grass five years, without dressing, and from which a crop of less than five hundred weight of hay had just been taken, was ploughed, and the sward well turned under. The next day one bushel and a half of buckwheat, *Polygonum Tartaricum*, was sown on the ground, broad cast, and well harrowed and rolled. I used no manure, as I understand the object of the experiment to be to ascertain whether, under some circumstances, a green dressing may not be substituted for other fertilizing substances. The season, although cold, has not been very unfavourable for the growth of plants of this description. In less than a month from the time of sowing, the buckwheat began to bloom; it was particularly exuberant, wherever by accident, a small quantity of manure was dropped, which has satisfied me and others who have seen the crop, that a moderate dressing would have greatly increased the product. Till the sward had begun to decompose, and thus afforded more food for the plants, the prospect was not very promising: three quarters of the growth was in the second month.

Sept. 6th. The buckwheat white with its flowers, and still growing, but getting into the milk, and to anticipate the ripen-

ing of the seeds was rolled and ploughed in; a revolving cutter was used to prevent clogging, and the old sward was so well rotted that there was little difficulty in the operation of ploughing, and the crop was thoroughly buried."

Mr. King in a subsequent communication to your Committee, dated August 23, 1833, says, "In my communication addressed to the Committee of the last year, which has been transmitted to you, I detailed my process of raising and ploughing in a crop of buckwheat for manure, on an acre of land. The last spring the ground was so well pulverized that it was ploughed with facility, and after harrowing and furrowing it was planted with Indian Corn, in hills, the same quantity and kind of manure being used, and the same method of cultivation pursued as in other pieces of corn growing in the same field.

The operations of planting and hoeing, on this experimental acre, have been easier than on the other land which had not been once planted, and the crop has better sustained the severity of the drought, to which all lands, in this vicinity, the present summer, have been exposed. The ground will be as mellow, and as well prepared for laying down with grass seed as it is commonly after planting for two years. I submit my experiment for your consideration. On viewing the field (to which I invite your attention) you will determine whether my process has been in any degree satisfactory, and whether a green crop may, under such circumstances be advantageously employed for manure."

Pursuant to the request, contained in Mr. King's last communication, your Committee on the 27th of August last, viewed the ground upon which Mr. King's experiment had been made

They found it remarkably well pulverized, and the growing crop of corn thereon was in a much more promising and flourishing state, and much better sustained the severity of the drought, to which all lands in that vicinity were then exposed, than the crops of corn which were then growing on the contiguous ground of Mr. King, of a similar soil, and which had been cultivated and manured in the ordinary manner.

The Committee award to Mr. King, who was the only applicant to them for a premium, the sum of twenty dollars.

D. Cummins, *Chairman.*

XII. ON CULTIVATION OF WHEAT AND RYE.

HECTOR COFFIN'S STATEMENT.

To the Trustees of the Essex Agricultural Society.

Gentlemen,—I received from a friend last fall a peck and about half a pint of white winter flint wheat, grown near Ithica, Tompkins county, in the state of New York, between the southern ends of Cayuga and Seneca lakes, said to be newly introduced there, to be very productive, and a species which never blights. This wheat was sent by one brother resident there, to another resident in this neighborhood, as a valuable present, to experiment on, in this sea-board climate.

This gentleman, not having it in his power to give it a trial last fall, placed it in my hands for that purpose. I selected a piece of ground I own in the town of Newburyport, on account of its being detached, well fenced and sheltered, and about the size required for the experiment. It had, however been let some years on shares, and planted with potatoes; was very muddy and somewhat encumbered with dog or joint grass; and had been scantily manured in hills when the seed was put in the ground, and much neglected in the subsequent cultivation. The last cultivation of the ground, the day I comenced my operations, September 28th, drew four horse cart loads of rank weeds and potato haulms from it. I then had it manured with four large cart loads of horse and hog manure mixed, (taken from a hotel stable where many swine were kept,) say two large cords; spread it equally on the surface and ploughed it in, harrowing the piece over, and picking out some of the remaining late abundant crop of weeds. It was then cross harrowed on the 29th of September, and the above eight and a quarter quarts of wheat was very evenly sowed, after being washed in strong brine, and rolled in air slacked lime, about five or six hours before putting into the ground; when it was once well harrowed in, on which was sown

eleven quarts of good herds grass seed, and the whole immediately rolled down without again harrowing, with a roller of about six hundred weight, and left to the work of nature.

It came up well, and attained a growth of six or seven inches before the cold weather set in, and nothing more was done to it till the 22d of July last, when it was reaped and put in the barn; and a few days after my foreman commenced threshing it in the usual way, by flail; but finding it, as he said, thresh hard, took the remainder to a threshing mill, where the straw was kept as the toll fee; and ten and a half bushels of clean good grain, with more than half a bushel of refuse, was brought back by him; which, together with what was threshed on my own barn floor, amounted by his own measurement to twelve bushels, clean good grain, plump and beautifully white.

The whole garden encloses about fifty rods of land; part of which was covered with cellar stones; a strip on the whole northeast side of the lot (about 200 feet long,) and about six or more feet wide, on account of a wall on that side, was not ploughed at all: so that the land covered with the wheat did not exceed, if it amounted to, a quarter of an acre.

This lot or garden being in Newburyport, about four miles from my residence, made it inconvenient, with the other occupations of my men, to attend to a spring top dressing; and it was neglected.

So small a piece of ground not coming within the limits of your rules for premium, believing it may be worthy the notice of the Trustees, also to make this peculiarly white and full kernelled hardy wheat better known among farmers in this quarter of the country; also to show what better cultivation, and better prepared and limed soil, with a spring dressing of leached ashes would do, is the object of this communication.

I am gentlemen, very respectfully,

Your obedient servant,

HECTOR COFFIN.

Newbury, Rock Farm, Dec. 10th, 1833.

MOSES EMERY'S STATEMENT.

To the Committee who have in charge the premiums to be awarded upon the cultivation of Wheat and Rye.

The following is a statement of my process in obtaining the crop which I enter for premium. The land had been pastured for several years and is of a sandy loam. It was broken up in the spring of 1830, and had forty loads of manure spread evenly and ploughed in, and was planted with corn, without manure in the holes, and obtained about fifty bushels of Corn per acre. After the corn was taken off the hills were split, and forty-four loads of manure was spread, and remained upon the top of the ground over winter. In the spring of 1831 it was again planted with corn, without manure in the holes, and had about sixty bushels of corn per acre. In the spring of 1832 split the hills twice in a row, harrowed it down, and sowed it part with wheat and part with rye, to wit:—

One bushel of Rye and one and a half bushel of wheat; crop 23 bushels of rye, and 22 1-2 of wheat—in the fall of 1832 the stubble was ploughed in and sowed with Rye about the middle of September, quantity of seed sowed two bushels, amount of land two acres by measure. No manure has been put upon the land since the fall of 1830, (by loads of manure I mean a common cart full) with the exception of about ten bushels of unleached ashes strewed upon a part of the land last spring. The grain was harvested the latter part of July, it has been threshed and winnowed since the twelfth of the present month and there was sixty eight and one half bushels. The rye was sowed dry.

MOSES EMERY.

West Newbury, Sept. 25th, 1833.

STATEMENT OF THE SOCIETY'S FUNDS.

In the Savings Bank, Salem,				$489 20
Interest accrued thereon since Oct. 1829, estimated				110 80
10 Shares in Warren Bank, Danvers,			par value	1000 00
6	"	Merchants Bank, Salem,	"	600 00
11	"	Commercial Bank,	" "	770 00
7	"	Mercantile Bank,	" "	700 00
3	"	Salem Bank,	" "	300 00
12	"	Exchange Bank,	" "	800 00
Three notes payable on demand, with satisfactory sureties,				717 00
Cash in the Treasury,				441 19
				$5928 19

December 31*st*, 1833.

ANDREW NICHOLS, *Treasurer.*

ESTIMATE OF THE SOCIETY'S EXPENSES, &c. FOR THE YEAR 1833.

Amount of premiums and gratuities awarded,*	$500 00
Amount of bills for printing, &c.	145 50
Expenses paid incident to the Exhibition at New Rowley,	16 75
Postage and transportation of pamphlets, &c.	7 06
Blank Books, Stationary, &c.	4 25
Compensation voted the Secretary, by the Board of Trustees,	50 00
Amounting to	$723 56

Attest. JOHN W. PROCTOR, *Secretary.*

* Note. There are several recommendations by Committees of gratuities which have not yet been acted on by the Trustees, so that this item may be varied from $20 to $30.

PREMIUMS

OFFERED BY

THE ESSEX AGRICULTURAL SOCIETY,

IN

1834.

I. MANAGEMENT OF FARMS.

For improvements and skill in husbandry, taking into view the entire farm and its appendages,—

The best,	thirty dollars.
The second,	twenty-five dollars.
The third,	twenty dollars.
The fourth,	fifteen dollars.

Remarks.

All claims for these premiums, must be entered with the Secretary, on or before Monday, the 16th day of June, the present year.

An accurate statement of management and produce, &c. will be required to be furnished previous to the 1st of December.

The Committee to view, the present season, are

Dean Robinson, of W. Newbury,
Daniel P. King, of Danvers,
William Johnson, jun. of Andover,
Amos Kimball, of Boxford,
Jeremiah Spofford, of Bradford,
Henry A. Breed, of Lynn,
John W. Proctor, of Danvers.

II. DAIRY.

1. For the best butter produced on any farm within the County, from the 1st of June to the 9th of July inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibtted, with a particular statement of the method of making and preserving the same, seven dollars.

For the second best, six dollars.

For the third best, five dollars.

For the fourth best, four dollars.

2. For the best produce of butter, on any farm within the county, from not less than four cows, in the six months next following the 20th of May the present year—a sample of not less than fifty pounds of this butter to be exhibited at the anniversary of the Society, *quality* as well as *quantity* to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, twenty dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county, in the months of *June*, *July*, *August* and *September*, in the present year; a sample of which, not less than one hundred pounds to be exhibited, ten dollars.

For the second best, eight dollars.

Remarks.

The Trustees have heretofore been very free in their offers to induce the exhibition of good butter. It is an article in which the farmers of Essex have a great interest; and for which, they are always sure of a liberal reward. It is to be hoped that they will prove by their exhibition of this article the present season, that they are not behind their neighbors in this most valuable domestic manufacture. Ladies, if your husbands are wanting in enterprise, come forward yourselves, and you will find your reward.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as manure, on not less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.

For the second best, ten dollars.

IV. FOREST TREES.

For the best plantation of *White Oak Trees*, raised from the seed, not less than one acre, nor less than one thousand trees, in the third years growth. thirty dollars.

For the second best do. twenty dollars.

For the third best do. ten dollars.

For the best plantation of *Locust Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Larch Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *White Ash Trees*, with the same conditions. twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Chesnut Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

☞Claims for these premiums may be entered with the Secretary of the Society. The plantations will be examined by Ebenezer Moseley of Newburyport, Andrew Nichols of Danvers, David Cummins of Salem, Benjamin Osgood of Methuen, and John Choate of Essex, a special committee for this purpose, in the third year after they are planted. A statement in writing of the entire process of cultivation will be required from the claimant.

V. CULTIVATION OF MULBERRY TREES, &c.

Voted, That the premiums for the cultivation of the mulberry tree, be offered to be paid in 1835, on condition that the Legislature renew their bounty.

And that the premiums for *cocoons* and *Silk* be paid the present year.

For the best plantation of white mulberry trees, not less than half an acre, twenty-five dollars.

For the second best, twenty dollars.

For the best nursery of white mulberry trees, not exceeding two years growth, twenty dollars.

For the second best, fifteen dollars.

For the best production of Silk exhibited either in the cocoons or manufactured, together with an accurate statement of the whole managament of the worms and amount of labor employed, produced by the enterprise of one family, fifteen dollars.

For the second best, ten dollars.

Remarks.

The Legislature having renewed their bounty to County Societies for a further period of five years, and it being desirable to give a fair trial, to the cultivation of the mulberry tree in this vicinity, it is probable, these premiums, or others on this subject, will be continued for several years.

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, (that is turning water from its natural current so as from time to time to overflow the land) with a detailed account of the manner, expense, and benefits produced, twenty dollars.

N. B. Claims for this premium must be entered with the Secretary, so that the Committee for viewing farms may have an opportunity of examining the crops while growing. If not awarded the present year, it will be continued for the next, and

so on for three years, in the hope of producing some valuable experiments on this subject.

VII. PLOUGHING.

I. DOUBLE TEAMS.

For the best performance in ploughing,	twelve dollars.
For the second,	ten dollars.
For the third,	eight dollars.
For the fourth,	six dollars.

II. SINGLE TEAMS.

For the best performance in ploughing,	ten dollars.
For the second,	eight dollars.
For the third,	six dollars.
For the fourth,	four dollars.

Remarks.

Double teams will be required to plough not less than one sixth of an acre, and single teams not less than one eighth of an acre. Double teams not less than *seven* inches deep. Single teams not less than *five* inches deepf The ploughs must be of the best construction—the furrows truly cut, and well turned.—The whole must be done in a workmanlike manner. So many premiums have already been awarded for ploughing; and so great have been the improvements in the construction of ploughs, that nothing less than the best of work will be satisfactory.—Those who intend to be competitors must give notice to J. B. Savory, Esq. of New Rowley, or the Secretary at Danvers, the week previous to the Exhibition.

VIII. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the persons who shall exhibit at the Show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward—a premium shall be given not exceeding ten dollars.

☞ In all cases proof must be given of the work done by the implement before it is exhibited; and of its having been used and approved by some practical farmer.

IX. COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of Cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used and the expense of raising the same: the experiment to be made in the three winter months, twenty dollars.

For the second best, fifteen dollars.

For the third best, ten dollars.

☞ These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for three years.

X. CIDER.

For the best barrel of Cider that shall be produced at the Exhibition in 1834, made within the county, a premium of fifteen dollars.

For the Second best, eight dollars.

Remarks.

If the cider presented is found worthy of the premiums offered, it will be taken to be used at the dinner. A detailed statement of the entire process of making and preserving the same will be expected. It must be the pure juice of the apple, unadulterated by any drug or foreign ingredient. And particularly no *distilled liquors* must be mingled with it.

XI. CULTIVATION OF WHEAT AND RYE.

For the best conducted experiment in the raising of wheat, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of rye, on not less than one acre of land, ten dollars.

☞ A statement of the produce—the manner of preparing the ground—the kind of seed used—the manner of preparing the same, &c. &c., including all the details in relation to the crop, will be required to be handed to the Committee.

XII. ANIMALS TO BE PRODUCED AT THE EXHIBITION AT NEW ROWLEY, ON THURSDAY, SEPTEMBER 25th, A. D. 1834.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the County, at least nine months from the day of Exhibition, ten dollars.

For the second do. five dollars.

For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence, as to the quantity and quality of her milk, and the manner in which she has been fed, ten dollars.

For the second do. seven dollars.

For the third do. five dollars.

For the best heifer that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, seven dollars.

For the second do, five dollars

For the best pair of three years old Steers, seven dollars

For the second do. five dollars.

For the best pair of two years old Steers, six dollars.

For the second do. four dollars.

For the best boar, five dollars.

For the second, three dollars.

For the best breeding sow, five dollars.

For the second, three dollars.

For the best litter of weaned pigs, not less than four, from two to six months old, six dollars.

For the second, three dollars.

XIII. HORSES.

For the best horse raised in the County, not less than *three* nor more than *five* years old, ten dollars.
For the second do. eight dollars.
For the third do. six dollars.
For the fourth do. four dollars.

XIV. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.
For the second best do. do. three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, three dollars.
For the best straw or grass bonnet, five dollars.
For the second best do. three dollars.
For the best wrought hearth rug, having regard both to the quality of the work, and the expense of the material, three dollars.
For the second best do. two dollars.
For the best piece of woollen cloth 7-8ths of a yard wide, and twenty yards in quantity, five dollars.
For the second best do. three dollars.
For the best piece of flannel, a yard wide, and twenty yards in quantity, four dollars.
For the second best do. do. two dollars.
For the best wrought woollen hose, not less than four pair, two dollars.
For the second best do. one dollar.
For the best men's half hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth, not less than twenty yards, four dollars.
For the second best do. two dollars.

For the best piece of linen diaper, not less than twenty yards, three dollars.

For second best do. two dollars.

For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.

For the second best do. two dollars.

For the best specimen of wrought lace, three dollars.

For the second best, two dollars.

For the best specimen of work, performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.

For the second best do. two dollars.

And should any other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

GENERAL REMARKS.

All claims for Premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his Agent, on or before 9 o'clock, A. M., of that day.

All other claims for Premiums must be handed or forwarded to the Secretary in writing.

Claims for Premiums on Farms, must be entered with the Secretary on or before the 16th day of June, the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to increase the funds of the Society; and will not be paid after that time. There will be deducted *twenty per cent.* from all premiums awarded to persons not members of the Society, at the time when the premiums were awarded; except they be for articles of domestic manufacture, or to females.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

All persons intending to be competitors in the ploughing match, must give information thereof to the Secretary, or to J. B. Savory, of Rowley, on or before the Monday preceding the day of Exhibition.

No person will be entitled to receive a premium, unless he complies with the condition on which the premiums are offered; and gives *notice as required* of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality*.

By order of the Board of Trustees.

Attest,

JOHN W. PROCTOR, *Secretary*.

January 1st, 1834.

ON SWINE.*

The feeding and fattening of swine is a subject of great importance to the farmer. Pork furnishes a considerable portion of the animal food consumed in his family, and constitutes in most cases a material item in his marketable produce. The prevailing impression is that the fattening of swine can seldom be pursued with profit to any extent beyond the consumption of the offal of the kitchen, dairy and farm. Some instances have come within our own observation, in which it has been attended with serious losses, though it is obvious that the result must depend materially upon the current prices of grain and pork, which are always subject to fluctuations, and do not always bear the same relation to each other. That swine are most useful as general scavengers, eating what nothing else will consume; and that no animal kept on the farm is so profitable in producing manure, and manure of a very valuable character, are circumstances

* This Essay was received too late to be inserted in its proper place; but it is deemed too valuable to be omitted. The Society will have great reason to be obliged to the author, for his unremitted exertion to promote their prosperity. J. W. P.

which make a considerable figure on the credit side of their account.

If instances are frequent in which farmers have found the return from the feeding or fattening of swine a very inadequate compensation for the labor and expense, others have come within our observation, presenting a different result; and therefore the subject deserves attention, and any actual and careful experiments in relation to it, which have been made, deserve to be encouraged and recorded. In all agricultural subjects, facts which have been carefully established, are the most valuable sources of instruction. I shall therefore proceed to detail some which have come under my own observation.

Two intelligent and respectable farmers, one of whose establishments I visited the last winter, gave me an account of their mode of feeding, the process of which I witnessed at the time. I subjoin the account from my agricultural journal.

1833. Dec. D. N. is now fattening three swine, whose daily allowance is one peck of meal each. Indian corn, buckwheat, and oats, mixed in equal quantities, constitute their provender. Corn is now worth 84 cts., buckwheat 56 cts., and oats 40 cts. per bushel. One peck of the mixture would cost therefore, about 15 cents.

P. C. is now fattening three large swine. Their provender consists of oats and corn in equal quantities ground together.—Of this they have more than twelve quarts each, per day, stirred in cold water. Corn is worth 84 cts., oats 42 cts. per bushel. Twelve quarts of this provender, making no charge of one sixteenth for grinding, would amount to 24 cts. per day. The last named swine were extraordinarily fine, weighing considerably over 400 lbs. each, when dressed, and were sold for seven cents per lb. What amount of live weight they gained per day is not ascertained; but if we suppose it to be two pounds each per day, and this would be a large gain, it is evident that the returns would by no means equal the expense.

From the Nantucket Inquirer of last autumn, I extract the following account: "A porker was raised in this town the past

season touching which we have the following particulars—weight March 25th, 75 lbs.—weight December 16th, 470 lbs.—increase in 267 days, 295 lbs., or 23 1-2 ounces per day. Average of corn consumed per day, 4 1-2 pints." This is the whole of the account given. It would have been useful to know how the corn was given; whether ground or not ground; whether cooked or not cooked.

John Andrew, Esq. formerly of Salem, informed me that a Mr. Ray, in the interior of New Hampshire, made an exact experiment in the feeding of swine. He put up sixteen and employed a man, whose exclusive business it was to take care of them, and to whom he gave his board as a compensation for his labor. He fed them entirely upon Indian hasty pudding. Corn at the time was valued at one dollar per bushel. He sold his pork for six cents per pound and realized a profit of from two to three dollars per hog. In this case it is desirable to know what the hogs actually gained in weight during the process of feeding; how long they were in being fattened; and what was the value of them when first put up. But this information is not attainable.

John Bellows, Esq. of Walpole, put up two swine, 15th Dec. 1833, to be fattened. When put up, one weighed 107 lbs., one 116 lbs. When killed and dressed, 2d April, 1834, one weighed 233 lbs., one 243 lbs. Together with the slops from the kitchen, they consumed as nearly as could be ascertained, three bushels of raw corn at first, and afterwards twelve bushels ground into meal and the meal scalded; making in the whole fifteen bushels of corn.

107+116=223 lbs. live weight at 5 cts.	11 15,
476 lbs. pork, at 6 cts.	28 55
Balance in favor of swine,	17 41
15 bushels corn at 84 cts.	12 60
Profit,	4 81

The Hampstead (L. I.) Inquirer states that Mr. Doty, of that town, slaughtered on the 23d December, a couple of pigs 14 months old, which weighed as follows:—one 611 lbs. the

other 578 lbs. making a total of 1189 lbs. These pigs, says the editor, were fed upon apples and milk through the latter part of the summer and one or two of the first fall months. Since it was designed to fatten them, they have been fed upon indian meal.

Elias Taylor, of Charlemont, an experienced and shrewd farmer, mentioned to me an experiment made by himself in fattening four hogs. He boiled for them three bushels of potatoes, and added to them when boiled one peck of indian meal—mashed the potatoes with the meal and added cold water. He then left this mixture to ferment; and when it had become sour he fed his swine freely with it. He says his hogs gained surprisingly on this food, and never throve faster; and that they were fed at a small expense. This statement certainly deserves attention, though it is much to be regretted that it was not managed and detailed with more correctness.

The value of fermented food for swine has often been stated and urged. My own experiments in this matter have not been made with sufficient exactness, nor for a sufficient length of time, to authorize me to speak with confidence on the subject, though they incline me to think favorably of it. "The most profitable mode, in the estimation of Arthur Young, of converting any kind of corn into food for swine, consists in grinding it into meal, and mixing the latter with water, in cisterns, in the proportion of five bushels of meal to one hundred gallons of water. This must be well stirred several times in a day, for a fortnight, during warm weather, or for three weeks in a colder season, at the expiration of which time it will have fermented and become acid. In this state, and not before, the wash is ready for use; it ought to be stirred every time before feeding, and it will be necessary to keep two or three cisterns fermenting in succession in order to prevent it being used before it is duly prepared. The difference of profit between feeding in this manner, and giving the grain whole or only ground, Mr. Young adds, is so great, that whoever tries it once will not be induced to change it for the common methods.

Complete Grazier, p. 297.

A recent experiment detailed in the British Farmer's Maga-

zine, of November last, corroborates these statements and deserves attention.

"I always," says the writer, Mr. Bolton, "feed my pigs on sour food, which I have invariably found to fat them faster, and make the flesh firmer and whiter, than when given in any other state. The following is my method of preparing it. As soon as the potatoes are steamed I have them, while quite hot, beaten to a pulp, and mixed with bran in the proportion of 28 lbs. of bran to a sack (240 lbs.) of potatoes; and this mixture is put into a vat for ten or twelve days until quite sour; this food makes them fat enough for porkers or small bacons. When I require them more than commonly fat, I begin with 50 lbs. of barley flour, instead of the bran, to each sack of potatoes, gradually increasing the quantity of flour till it amounts to half the weight of potatoes; when the quantity of flour is greater than the moisture of the potatoes will absorb, I add a sufficient quantity of water to make it into a thick paste. I never give it until it has fermented. I send you the result of some experiments to ascertain the weight gained on this food in a given time; and also the proportion which the live and dead weight of some of my pigs bore to each other.

Two pigs put up to feed for thirty days—

No. 1 weighed at putting up 102 lbs.—No. 2, 109 lbs. Put to feed on potatoes and bran soured, but allowed to run out all the time of feeding; at the end of thirty days they were killed, when No. 1 weighed 158 lbs. No. 2, 172

102 109

Gain in thirty days, 56 lbs. Gain, 63 lbs.

No. 1 weighed dead 104 lbs. No. 2 do. 113 lbs. or about 13 to 20.

Two Berkshire pigs, about seven weeks old, weighed—No. 1, 33 lbs. No. 2, 28 lbs., April 21, 1832. Killed for bacon, Nov. 19, when No. 1 weighed 419 lbs. No. 2, 404 lbs. live weight.

April 21, 33 28

Increase in 212 days 386 lbs. gain 376 lbs.

Dead weight of No. 1, 330 lbs. or in proportion to live as 16 to 20.
Dead weight of No. 2, 316 lbs. or in proportion to live as 15¾ to 20.

These pigs were never confined, but at all times had liberty to run in a small field with other pigs; they were fed with potatoes and bran floured until the 1st of October, from which time they had along with two small bacon pigs and some porkers, potatoes and barley flour, commencing with 50 lbs. of flour to the sack of potatoes and each week increasing the quantity of flour 10 lbs. so that at last they had 110 lbs. of flour to the sack. The small bacon pigs weighed

No. 1, alive, 204 lbs. dead, 141 lbs.
" 2, do. 216 lbs. do. 149 lbs.

Or in the proportion of 14 to 20.

I shall now take leave to detail some experiments of my own in the feeding of swine.

EXPERIMENT I.

Two hogs about one year old; one of them a barrow in very good condition; the other a barrow recently gelded, and in ordinary condition, were put up to be fed exclusively upon Indian hasty pudding or indian meal boiled with water. We began feeding them the first of March 1831, and weighed them again on the nineteenth of the same month. In the 18 days they consumed six bushels of indian meal. They were offered cold water to drink but did not incline to take any.

The result—

No. 1 weighed on 1st March		233 lbs.
do. do.	19th do.	269
	gain	36
No. 2 (recently gelded) weighed on 1st March		190 lbs.
do. do.	19th	247
	gain	57

The gain of the two was 93 lbs. in eighteen days. The quantity of meal consumed by them was 10 qts per day to the two. This allows 30 qts to a bushel deducting two for grinding. The

price of corn at the time was 70 cts per bushel. The expense of the increased weight is 4,5 cts. per lb.

March 21, 1831. Killed the hog mentioned first in the foregoing experiment. Live weight 273 lbs. Weight when dressed 215 lbs. Loss in offal, loose fat included, 59 lbs. or a little more than one fifth.

EXPERIMENT II.

No. 2, mentioned above, weighed on 23d March,	253 lbs.
do. on 30th April,	312
In 38 days, gain,	59 lbs.
No. 3, a shoat purchased from a drove, weighed—	
On 28th March,	100 lbs.
do. do. On 30th April,	151 lbs.
Gain in 33 days,	51 lbs.

This is a fraction over 1 lb. 8 oz. per day each, nearly 1 lb. 9 oz.

In this case their food was exclusively boiled potatoes mashed with indian meal. Exact amount consumed not ascertained, but fed as freely as they would bear.

EXPERIMENT III.

The two last named hogs were for the next 20 days put upon indian hasty pudding exclusively, with the following result:

No. 2 weighed on 30th April,	312 lbs.
Do. do. 20th May,	382 lbs.
Gain in 20 days,	70 lbs.
No. 3 weighed on 30th April,	151 lbs.
Do. do. 20th May,	185 lbs.
Gain in 20 days,	34 lbs.

The two in the above named 20 days, consumed four and one half bushels of meal, cooked as above. Meal 78 cents per bushel. Gain of the two, 104 lbs. in 20 days.

EXPERIMENT IV.

Sundry swine purchased from a drove, and fed with meal and potatoes, washed and mashed—

28th March, 1831,	19th May, 1831,
No. 1 weighed 97 lbs.	165, gain in 52 days, 68 lbs.
2, do. 134	182, do. 48
3, do. 100	186, do. 86

The two following, raised on the farm, and fed as above—

25th April, 1831,	19th May, 1831,
No. 4 weighed 151 lbs.	206, gain in 24 days, 55 lbs.
5 do. 140	165 do. do. 26

EXPERIMENT V.

In this case it was not intended to force their thrift, but to keep the swine in an improving condition. They were shoats of the last autumn, and were of a good breed.

Tuesday, 3d April, 1833. Put up four shoats, and began feeding them with indian hasty pudding.

	3d April,	22d April,	25th June,
No. 1,	176 lbs.	202 lbs. gain 25	264 lbs. gain 62
2,	119	153 " 34	226 " 73
3,	150	170 " 20	218 " 48
			[Total, 183 pounds.
4,	121	145 " 24	Killed 20th May.

From 3d April to 22d April, the above swine consumed seven bushels and one peck of indian meal. From 22d April to 25th June seven bushels of indian meal, cooked as above.

One of the above, No. 4, was killed on 30th May; being absent, the live weight was not ascertained.

On the 25th June, the three remaining hogs were weighed, and in the 63 days from 22d April to 25th June, they had gained in that time 183 lbs. as above.

After 30th May, when one of them was killed, one peck of meal made into hasty pudding with a small allowance of the waste of the kitchen for a part of that time, lasted them three days, that is $\frac{2}{25}$ or less than a quart, say $\frac{1}{8}$ of a quart per day to each.

☞ At first we employed half a bushel of indian meal to make a kettle of hasty pudding; but we soon found that a peck of meal by being boiled sufficiently would make the same kettle nearly full of hasty pudding and of sufficient consistency. The kettle

was a common sized five pail kettle, set in brick work in the house; and it was remarkable that the peck of meal produced nearly the same quantity of pudding, that we obtained from the half bushel, which showed the importance of inducing the meal to take up all the water it could be made to absorb.

The price of Indian Corn was at that time 75 cts per bushel —30 qts of meal to a bushel deducting the toll. The amount of meal consumed in the whole time from 3d April to 25th June was 14¼ bushels—the cost $10,69—the total gain, making no allowance for the gain of No. 4 from 22d April to 30th May, which was not ascertained, was 287 lbs.

The gain of No. 1, 2 and 3, from 22d April to 25th June was 183 lbs. in 63 days; and allowing one peck to serve the three hogs for three days, required 5¼ bushels, the cost of which was $3,94. The live weight could not he estimated at less than 4 cts per lb. when pork was at market 6 cts.

The value of the 183 lbs. therefore was equal to $7,32, or at 5 cts to $9,15 cts.

The gain of the swine for the first 19 days, from 3d to 22d April, was

No. 1, 26 lbs. or 1,368 per day.
" 2, 34, " or 1,789 "
" 3, 20, " or 1,052 "
" 4, 24, " or 1,263 "

The gain from 22d April to 25th June, 63 days, was,

No. 1, 62 lbs. or 0,984 per day.
" 2, 73, " or 1,158 "
" 3, 48, " or 0,761 "

The difference of daily gain in the two periods was attributable to the diminished quantity of meal. The question then arises, whether the first mode of feeding was as economical as the second.

In the first 19 days, 7 bush. 1 peck consumed, gave 104 lbs. gain.
" next 63 " 5 " 1 " " " 183 "

Had the first gain been in proportion to the second gain in reference to the meal consumed, the 7¼ bushels which gave 104 lbs. should have given 252⅝ lbs. This great disparity can be ex-

plained only in the more economical preparation of the meal, by which a peck, taking up as much water as it would contain, gave a kettle nearly full of pudding, when half a bushel of meal, imperfectly prepared, gave little more. This seems to demonstrate the great advantage of cooked food, both as it respects its increase of bulk and the improvement of its nutritive properties. Whether it would apply to those substances, whose bulk is not increased by cooking, equally as to indian meal and the like, is a matter which experiments only can determine.

Such are some few trials inreference to the feeding and fattening of swine, which I have made, or information of which I have obtained from other sources, which may at least lead the inquisitive farmer to further experiments and inquiries, on a subject of great importance to his interest. The inferences to be made from them I shall leave to others. The results, as will be observed, are not uniform. The thrift of animals must depend on various other circumstances besides the kinds or the quantity of food given them. Much depends on the breed, as every farmer knows; much on the health of the animal; something on the season of the year. I failed in attempting to fatten several swine in one case, though they were carefully attended and various kinds of feed were tried, and the failure was totally inexplicable until they were slaughtered, when the intestines were found corroded with worms, resembling those found in the human stomach, and this, I have no doubt, prevented their thrift. The same fact has occurred in another instance, and with the same result. I failed in attempting to fatten some other swine, who had been driven a considerable distance and exposed, probably not even half fed on the road, to severe cold and storms. Some of them were frost bitten in their limbs; and though attended and fed in the most careful manner they made no progress for months. In an experiment recently made, of giving swine raw meal mixed with water, I have found a falling off in their gain of nearly one half, compared with giving their food cooked, such as boiled potatoes and carrots, mixed with meal while hot; the result being, in a stye containing a number of swine, as 279 to 500. In respect to confinement or freedom, various opinions

are entertained. "Elder Turner, of New York, says, that hogs should never know what liberty is, but should be kept close all their lives, and as inactive as possible. That by this method double the quantity of pork can be produced with the same expense of feed."* F. Peabody, Esq. informed me that the Shakers at Canterbury, N. H. told him that they deemed it indispensable to the thriving of their swine that they should have access to water to wallow or wash themselves in; and that they by no means did so well without it. On this point I have had no trial farther than to satisfy myself that fatting hogs are injured by being suffered to root in the earth.

With respect to the age at which it is advantageous to put up swine to fatten, I have only to remark, that it is with swine as with other animals, there are some breeds which come much sooner to maturity than others. A successful farmer in Saratoga, county, N. Y., says that March pigs, killed about christmas, are the most profitable for pork. Four pigs of what is called the Grass breed, were slaughtered at Greenfield, New York, which weighed 348 lbs. 318 lbs. 310 lbs. and 306 lbs. at nine months and seventeen days old.

On this point, however, I take leave to present a letter with which I was honored by John Lowell, Esq. whose authority in the agricultural community is justly estimated.

"Boston, April 18, 1831,

"To Rev. Henry Colman.

"*Dear Sir*—

"I have been prevented by the state of my eyes from answering your inquiries as to my experience in raising old or young pigs. * * * * * I never *wintered* any pigs, as no person resides on my place from Dec. 1st, to May 1st. It was therefore matter of importance to me to ascertain on what description of pigs, or rather of what age, the most flesh could be put in my limited time with similar treatment. I may say that I have fully and clearly ascertained, from a trial of 20 years, that young pigs of from 25 to 30 pounds, will give nearly double, in some remarkable cases three times, as many pounds as shoats of 6 months

* N. Y. Memoirs of Agri. Vol. . p. 50.

weighing from 100 to 150. I have taken two pigs of 100 lbs. each, age six months, and never was able between May and November, to get them above 180, rarely above 170. I have taken three pigs of about 30 lbs. each, and on the same food which I gave to the two they would weigh from 170 to 180 each in the same period;—nay I have taken pigs of 200, and never could get them to weigh more than 300 in 7 months on my food. The way I ascertain the quantity of food is that I never give any thing but the produce of my dairy, and the refuse of the garden, peaches, apples, and cabbage, which are uniform generally.

3 pigs of 90 wt. or 30 wt. each, will give ordinarily 510 lbs.
less original wt. 90 often not more than 60.

gain 420 lbs.

2 pigs of 100 wt. each, will give ordinarily 340 lbs.
less original wt. 200

gain 140 lbs.

"But the 3 pigs of 90 will not consume for the first 3 months half so much as the 2 of 100 each, and I have kept a 4th and sold it in August for quarter pork.

"There is nothing new or remarkable in these facts. It is the law of the whole animal creation. It is true of the calf and of man. The child of 7 lbs. quadruples its weight in 12 months; and the calf of 60 wt. if fine and well fed will weigh 600 wt. at the end of the year, and (if a female) will not double the last weight at any age.

* * * * * * * *

"*Yours, very respectfully,*

"J. Lowell.

"P. S. It should be remarked that the weight at purchase is live weight, and at sale dead or net weight, because in truth to the owner this is the true mode of considering the subject. No doubt my sort of food is peculiarly favorable to young animals, it consisting in very liberal allowance of milk. If the older pigs were at once put on Indian meal they would attain to 250 at a year old, but the cost of the meal at 70 cents per bushel would

amount to 9 dollars, and if the first cost, 5 dollars 50 cents, be added, and the pig sold at 6 cents, there would be but two dollars gain on two pigs of 100 lbs. each; while three small pigs without meal fed on milk would give 24 dollars in the same time. I do not mean to give minute details but general views. As an important qualification of the foregoing statement it should be added that shoats of six months bought out of droves have usually been stinted in their growth, and animals, like trees, recover slowly after a check. I presume if shoats were taken from a careful and liberal owner the difference would be less. But as a general law it may be safely affirmed, that weight for weight at the purchase, the younger the animal the greater the positive, and the far greater the net, gain. At least such is my own experience and belief."

The foregoing letter of this intelligent and practical farmer is entitled to particular consideration. I have one or two other statements, which deserve attention. It is stated in the Domestic Encyclopedia, article Soiling, that "Twenty five shoats were fed for three months with green clover cut from less than one acre; they were then fed on Indian Corn and when killed weighed three thousand pounds. This is certainly an extraordinary statement, and I have no other authority for it than what is here given. But the Rev. Thomas Mason, of Northfield, Mass. showed me the 27th Sept. last, three fine thrifty swine about nine months or more old, nine-tenths of whose feed, as he assured me, since the 13th of May last, had been obtained from one-eighth of an acre of clover cut and given to them green.

The preceding facts and experiments encourage the belief that hogs may be raised and fattened by the farmer to advantage, where corn is worth about seventy cents per bushel, and his pork will bring him six cents per pound. Like almost every other business, especially of an agricultural nature, success must greatly depend on skill, care, selection, and good management. The best swine that I have ever found have been in dairy countries, for there cannot be a doubt that milk and whey for every animal are among the most nutritious of aliments. Indian meal probably ranks next, though many farmers prefer a mixture of proven-

der, such as corn, oats, rye, or barley ; but I believe in all cases cooked food will have a decided advantage over that which is given in a raw state : an advantage more than equivalent to the labor and expense of its preparation. Potatoes are a valuable article of food, but the pork is not so good as that fattened upon corn. Carrots are more nutritious than potatoes. Corn given in a raw state or on the ear is a most wasteful management.

Swine ought to be kept on every farm in sufficient numbers to consume all the offal and waste of the dairy and kitchen. If beyond this, a breed can be obtained, which will arrive at early maturity, and which can be advantageously grass fed or kept at a small expense and in an improving condition through the summer; and being put up to fatten early in autumn and forced as much as possible so as to be sent to market early in the winter, the farmer will ordinarily find a fair profit in this branch of husbandry. A very great advantage is found in the keeping of swine from the valuable returns of manure both in quantity and quality, which are obtained from them, where care is taken to supply them with raw materials for the manufacture. Too much care cannot be bestowed in the selection of the breed and the general health of the animal when put up to feed; and it is strongly recommended to every careful farmer occasionally to weigh the animal and measure the feed, that he may ascertain seasonably on which side the balance of debt or credit is likely to fall. Nothing is more prejudicial to good husbandry than mere guesses and random conjectures ; and though the result of our operations may not meet either our wishes or expectations, an intelligent and reflecting mind will be always anxious as far as practicable to know precisely how far they correspond with or disappoint them. Truth, exact simple truth, in every thing, is the proper pursuit and the most valuable possession of the human mind; and more nearly than any thing else connected with man's true interest and happiness.

HENRY COLMAN.

Meadowbanks, Deerfield,
20th April, 1834.

OFFICERS

OF THE

ESSEX AGRICULTURAL SOCIETY

ELECTED SEPTEMBER, 1833.

EBENEZER MOSELEY, of Newburyport, *President.*

HOBART CLARK, of Andover,
DAVID CUMMINS, of Salem,
JAMES H. DUNCAN, of Haverhill,
SOLOMON LOW, of Boxford,
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TRANSACTIONS

OF THE

ESSEX

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FOR

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March, 1835.

Salem Gazette Press.

AN

ADDRESS

TO THE

ESSEX COUNTY

AGRICULTURAL SOCIETY,

AT NEW ROWLEY, SEPTEMBER 25, 1834;

AT THEIR

ANNUAL CATTLE SHOW.

BY EBENEZER MOSELEY,

PRESIDENT OF THE SOCIETY.

Published by order of the Society.

SALEM:
PRINTED BY FOOTE AND CHISHOLM.
1835.

ADDRESS.

GENTLEMEN.

We have again assembled on this joyful festival, to present the best of our flocks and herds, and the choicest productions of the year; and at the same time to raise a note of praise and thanksgiving, from grateful hearts, to the Author of all our blessings, for the good things he has done for us. We have not come to celebrate the occasion of a splendid victory, or to mourn over a signal defeat; we have not come to pay a tribute to human greatness, or join in the strife of party; but in the quiet spirit of our profession, to animate one another to greater industry and effort, in our peaceful and happy employment.

Although you have been pleased to assign me a high rank among the officers of your society, yet my professional engagements have prevented me from acquiring that practical knowledge in agriculture, which would seem to belong to my office. It is, therefore, with unusual embarrassment that I appear before you upon this occasion, to speak on a subject, in relation to which my own experience has been so limited.

The profession in which I have been engaged, for many years, has suffered under the unmerited reproach of uncertainty, till the exclamation, "the glorious uncertainty of the law," has become familiar. It is not, however, true that there is uncertainty in law. Law is sufficiently certain, but the error lies in

those, who attempt to administer it. A musical instrument may be made to give forth excellent melody, but it is not every one, who makes the attempt, can get it out.

The art or science of agriculture, if examined, will be found to be as far removed from certainty as the law. That is, there is not any settled opinion as to the means of producing the best results. Agriculture, in its highest state of improvement, must be the result of long experience. The great utility, therefore, of agricultural societies, is, that they call forth to public observation the experience and practice of those, who have been most successfully engaged. Yet it is not a little surprising that agriculture, which was coexistent with man, which has passed through all the successive ages and generations of men, which has had the knowledge of this long experience reflected upon it, is yet, probably, in its infancy, and involved in much uncertainty.

I will illustrate this idea of its uncertainty by taking the cultivation of corn. One would naturally suppose, that the long experience among us in the cultivation of corn, would have settled down in establishing in the minds of all men, some fixed and settled rules as to every part of its cultivation. Yet we find that such is not the fact. I begin with the planting of corn. It is not yet well settled, whether the moon has an influence upon vegetation. Some plant without regard to the moon, and some are very careful to plant only in certain stages of the moon. Some recommend soaking and even sprouting the corn before it is planted, others think it does as well without. Some advise planting in hills, while others think a better crop is produced by planting in rows. Some place the manure over the corn, some place the corn over the manure, while others spread the manure over the ground. With respect to hoeing the corn, some think the corn should be hoed while very young, to destroy the weeds, yet others prefer the corn should remain and the weeds grow up till they get to some height. The reason assigned is, that the corn is less liable to be destroyed by birds, squirrels and worms. Some are of opinion that no hill should be made about the corn, while others deem the hilling the corn to be attended with much benefit. Some practise taking the suckers from the corn, while

others severely censure this practice. Some are of opinion that the stalks should not be cut until the corn is sufficiently ripened to be gathered; others are of opinion that cutting the stalks after the farina has fallen, does no injury to the corn, and affords an excellent fodder for cattle in the winter.

Such are some of the various opinions which have been advocated relative to the cultivation of corn. It is not my design in mentioning them, on this occasion, to speak discouragingly of the art of agriculture. My more immediate object is, to show the importance of greater exactness and closer observation on the part of those, who turn their attention to the subject of agricultural experiments.

It is greatly to be desired, that our agricultural brethren would be more particular in keeping exact records of the cultivation of their respective crops, and would communicate the result to some agricultural journal for the benefit of the public. It would be like that charity which is doubly blessed. It would be a useful and agreeable exercise to him who should make that record, and it would be highly beneficial to those who should receive it. It would awaken a general spirit of inquiry among our agriculturalists, which would lead to more certainty of success in their several crops.

There is no employment, which appears so well adapted to the health and pleasure of man, as agriculture. That merciful Being who early pronounced, that in the sweat of his brow, he should eat bread all the days of his life, has in great kindness so conformed his nature that this judgment is the great source of his enjoyment. Active and regular employment seems peculiarly adapted to the nature of man, whether he stands in the high places of civilized life, or roams through the forest. It is by this continued exercise and labor, that the body, or, as expressed by the poet, "this harp of thousand strings, is kept in tune so long." Observe the man of luxury and wealth, who avoids labor and exercise, and indulges himself in continual rest. You will probably find him the victim of disease, his sluggish mind dwelling upon the pains, either real or imaginary, of his sluggish body. Is there a day laborer, who enjoys health of body and

mind, who would exchange situations with such a voluptuary. Would he not instinctively say, with the wise man, go to the ant thou sluggard, consider her ways and be wise.

The improvement which has been made within a few years in the art of agriculture and in agricultural implements, must be highly gratifying to every farmer. Who, forty years ago, would have thought it possible to raise one hundred bushels of corn on one acre of ground? Yet now, it is no uncommon case for a farmer to raise a much greater crop. This improvemeut must be attributed in a great measure to the influence of the press. If we go back but half a century, I believe we shall find no periodical publication either in Europe or America which treated exclusively on the subject of agriculture. The consequence was, that in those districts, where particular branches of husbandry were the most successfully and judiciously treated, the knowledge remained with them, unless, perhaps, slowly communicated from one to another, as accident or opportunity should offer. But when journals, devoted to this art, began to be put in circulation, containing the experience of intelligent, learned and practical men, the improvement in particular districts became very generally disseminated. It is true indeed, that in many cases these publications were coldly and reluctantly received, from a false notion, that book learning, especially when it contradicted the opinion they had derived from tradition, must be very visionary. The light of truth has in a great measure removed these errors, and a new era has commenced upon the subject. The knowledge which has been derived from science and experience in one quarter of the world is communicated by the press to all others, and that which was claimed as private property is now communicated for the benefit of all. One fact will strikingly illustrate this subject. When Mr. Knight, president of the London Horticultural Society, sent his first present of new pears in 1823 to Mr. Lowell, his letter and the list which accompanied it, were published in the Massachusetts Agricultural Repository. Within twelve months, application was made for these fruits, and scions were actually distributed from the lower part of Maine to Cincinnati in Ohio.

Among the great improvements which have been made in tools and implements of husbandry, the plough may be mentioned as an instance. Such have been the great improvements in this article, within a few years, that I am told one yoke of cattle will do the work, in one day, which formerly required two yoke, and will do the work much better. Our ancestors used the flail to thrash out their grain, but modern invention has produced a machine, moved by horse power, and thrashes out as much grain in one day, as one man can thrash in ten days with a flail.

A rake has been invented, moved by horse power. It is said that by this horse-rake one man with a horse and boy will put the hay into winrows as fast as eight men can put it into cocks, after it is raked. Among the wonders of the age steam has been applied with surprising success in propelling vessels on water and wagons on land, but in my wildest flights of imagination, I had never conceived the idea that steam could be applied to agricultural purposes. Yet Professor Rafinesque of Philadelphia, a gentleman of great scientific attainments, advertises for farmers his steam plough, by which six furrows are ploughed at once, and which he says will in one day perform the work of a single team for a week, and in the best manner. What a delightful contemplation. How wonderful is man! May we not indulge the hope, that the day is not remote, when all agricultural operations will be performed by steam.

Those persons who have been accustomed to follow the same course of husbandry, which their fathers and generations before them adopted, have favored the opinion, that very little is to be learned upon this subject. It is difficult to make them comprehend, that this art involves principles as extensive and as hard to be understood as any other art which can occupy the attention of men. They have never turned their attention to the great improvements in agricultural implements. The plough which their fathers used did very well, and they think it still does very well. They have never considered that agriculture is an important branch of Natural Philosophy, nor have they ever attempted to understand the nature of different soils, the economy of manures, and the adaptation of particular kinds of manure to

particular soils, the regular and systematic rotation of crops, improved modes of tillage, the different breeds of cattle, sheep and swine, and the different kinds and qualities of fruit and fruit trees. Yet these are subjects, which the skilful farmer will deem it necessary to understand, and he will devote his attention to them, as to the study of an important and difficult science.

It is not many years, since an application was made to the Legislature of this State, by the Trustees of Dummer Academy, in this county, for aid in founding a professorship of scientific aad practical agriculture, as connected with the institution. Perhaps no institution in the state could be found more favorable for this object. There is a farm connected with this institution, and under the direction of the trustees, consisting of several hundred acres, and embracing a great variety of soil. This institution is exceedingly well adapted for an agricultural school, and with but small aid from the Legislature might be rendered highly useful to the community. Young gentlemen might here come and study agriculture as a science, and be prepared to follow it through life as an honorable profession. This application was deemed of so much importance, that a committee from the Massachusetts Agricultural Society came to the farm, examined it and made a favorable report to the Legislature, recommending that the petition of the trustees should be granted. It it to be regretted that the application did not meet with success. Yet I am not without hope that the Legislature will feel the importance of the subject, and will extend its aid to establish some institution for learning scientific and practical agriculture. Shall schools and colleges be deemed important to diffuse general knowledge, shall military and naval academies have the fostering hand of government to impart knowledge in their departments, shall the sciences and fine arts have teachers for their objects and agriculture alone receive no aid? This art or science which is more important to the prosperity, wealth and happiness of our nation than all others? The loss of which for one year would probably exceed in value, and produce more poverty and distress than the loss of all our manufactures and commerce?

But because all our requests are not granted we must not

complain. There are doubtless grave objections to endowing an institution for special purposes, which has no higher claim than perhaps many others. We ought rather to speak in terms of gratitude of the Legislature for their liberality, nay munificence, in extending so much encouragement to the agricultural societies throughout the commonwealth. It is now more than fifteen years since they have extended a liberal and fostering hand to these societies, and at the last session the act was continued for five years longer, with scarcely a dissenting voice. The geological survey of the commonwealth is another instance of liberal legislation for the advancement of science, which should command our highest praise.

The act of 1819, giving a bounty to agricultural societies, contains a provision which shows the watchful care of the legislature over the interests of the commonwealth. It is made the duty of the several societies to offer annually such premiums and encouragement for the raising and preserving oaks, and other forest trees, in such manner and upon such terms, as to their discretion shall seem best adapted to increase and perpetuate an adequate supply of ship timber within this commonwealth.— This society, in compliance with the requisition of the statute, has annually offered libera! premiums for plantations of the oak and other forest trees, but such has been the surprising neglect or inattention to the subject, that I believe in no instance, has a claim been made for either of the premiums offered. It is true, indeed, that the Rev. Mr. Perry of Bradford, presented for the notice of the society a large number of young maple trees, transplanted from the forest, but these were not among the description of trees, for which a premium was offered by the society.

Viewing this as an interesting subject for our consideration, and growing of more and more importance every year, I shall venture to submit to you some remarks upon our forests, and fruit trees, although at the hazard of being very uninteresting. Our wood lots are highly valuable for fuel, fences, and ships. The price of wood for fuel is already one of the heaviest articles of expense in every family. Our commonwealth, stretching along the sea shore, indented with bays, creeks and navigable rivers,

has in past time found much employment in ship building, and if it be true, as has been asserted, that a ship of the line requires all the good wood which can be usually found on fifty acres of well wooded land, our prospect is alarming. From present appearances this business must soon be abandoned, from the want of suitable timber. A good wood lot is even now considered among our most valuable lands. What then must be its value in future time, if we go on in our present wasteful use of fuel?—Shall we have less need of it in time to come for our fires, fences, buildings and ships. Certainly, every year is rapidly reducing the quantity of wood, and shall we adopt the strange policy of the man, who would do nothing for posterity because posterity had done nothing for him? Our ancestors, when they landed on these shores, found themselves surrounded by dense, impenetrable forests, where now are our cities, towns, villages and fields smiling with plenty; and they bestowed their greatest labour to subdue those impenetrable forests, and convert them to cultivated fields. There was then no need of economy. The very ashes were of more value than the wood, and some of the remaining fire-places show with what improvident profusion they supplied their fires.

In order to increase our wood lots we must direct our attention to two objects. First, to preserve those which now remain, and second, to raise new plantations. I believe there has been a difference of opinion among our farmers as to the best course of proceeding to preserve our forests. Some recommend selecting out the old and decaying trees for fuel, letting the younger growth stand, while others advise cutting clean, in the winter season or when the sap is down. The latter is probably the most general and perhaps the better opinion. It is recommended to cut as near the ground as possible, in order that the new shoots may be thrown out near the roots. Particular care should be taken to exclude cattle, to prevent their cropping the young shoots. It is supposed the trees will attain a sufficient growth in about forty or fifty years to cut again.

For the purpose of increasing our wood lots it will be necessary to turn our attention to raising new plantations. In this coun-

try very few attempts have been made to produce wood lots by planting, but in Europe I believe it is very common. Some recommend planting the seed in nurseries, and then transplanting the youug trees to the place, in the plantation where they are to stand; while others prefer planting the seed in the place where it is intended the tree should grow, because, in this way, it is said the young tree receives no check by shortening the tap root, or taking off the fibrous roots. In either case the tree should be set out, or the seeds planted, much thicker than it is intended the trees should grow for timber, for in this way they will grow much straighter and more thrifty, and the thinnings will in a few years furnish not only fuel, but hoop poles and wood for other purposes. The plantation will grow much more readily if the ground be in a fine tilth for cultivation. It may then be marked out by cross furrows at four feet distance from each other, and the seeds planted or the young tree set out at the intersections of the furrows. The ground may be planted for several years between these rows with potatoes or some tillage crop, and the cultivation greatly benefit the young trees. Cattle must be carefully excluded at all seasons of the year.

The following experiment, by the Hon. John Wells, of Boston, who has made some valuable communications to the public upon this as well as upon other subjects, will show the necessity of putting the acorn, or any seed of the forest tree for raising a plantation, into cultivated ground. About ten years since, he took about six acres of old pasture land, and proceeded gradually to plant thickly over the whole lot several bushels of acorns, chesnuts, &c., in the following manner: A tongue of earth was raised by the hoe and an acorn or other nut put beneath at a depth of two or three inches; then the sod was pressed down with the fork or hoe to prevent a loss by birds, squirrels, &c., and all stock was kept from the enclosure. Mr Wells says, the trees have to be sure vegetated, but they seem quite unthrifty in the tough grass-sward, with which they feebly contend, and there appears at present little room for much expectation from this mode.

Forest Trees are exceedingly tender in their early growth,

and the land in which they are planted, must be well prepared and for a long time cultivated, in order to raise trees from the seed.

In England, as in this country, the management of forest trees and wood lots is left wholly to the discretion of their respective owners, with this exception, that in England the government claim a right to certain large timber for purposes of naval architecture. In France, the whole forests of the kingdom, whether royal domains or private property, are under the direction of commissioners of the forests, and no individual can cut down an acre of his wood without permission of government. Such is the character of the laws, and the rigid system of inspection, that it is calculated the forests of France, and the supplies of wood from them, will never diminish, and that there will always be sufficient for domestic consumption, for fuel as well as for civil and naval architecture. Even during the revolution, when life, property, and the dearest rights of man were disregarded and involved in one general ruin, when havoc and plunder sought every thing which time and habit had rendered valuable, her great and extensive forests were sacredly preserved. England is abundantly supplied with mineral coal for domestic purposes, and for her extensive manufactories, while in France, wood is used almost exclusively. It is, therefore, highly important that she should have laws, and those strictly enforced for preserving her forests and woods.—Nor is it less important in our own country. I could wish all our forests and wood lots under the control of commissioners like those of France, although it might operate severely upon private rights. But, as in many other cases, these private rights might be yielded up for the public good. I would require every public highway in the commonwealth to be lined, on each side, at the distance of two or three rods, with the elm, button-wood, maple, ash, oak, or some other forest tree. This would not only afford a delightful shade for the traveller, but it would produce a highly valuable growth of wood. I have often felt a surprise that our farmers should not more generally cultivate trees, about their houses, for shade and ornament. This might be done with

no expense, but a few hours of labour, and it would render their habitations more pleasant and give to them a great additional value, should they have occasion to sell, or should the estate descend to their heirs. These trees would be a living monument to their memories, while that raised by the hand of affection may have crumbled to the dust. With what feelings of veneration do we often see the majestic elm, spreading its mighty branches, and throwing its cooling shade around the humble mansion of some former personage. Such trees carry with them lessons of instruction to generations which never heard the voice of him who planted them.

Perhaps no country in the world is so highly favored in the beauty, variety, and utility of her forest trees as the United States; or perhaps I should say North America. Monsieur Michaux a French gentleman, of much science and a distingushed botanist, made a voyage to this country in 1802 for the purpose of examining our forests, and in 1806 he was employed by the French government to undertake another voyage under the orders of the administration of French forests. He devoted several years to obtain a knowledge of the properties, variety and utility of various sorts, as applied to the arts. He states, that the number of sorts of American forest trees, whose growth amounts to thirty feet at least, and of which he has given a description, amounts to 137, of which ninety-two are employed in the arts. In France there are only thirty-seven which grow to that size, of which eighteen only are found in their forests, and seven only of these are employed in civil and maritime architecture.

There is one subject, connected with forest trees, upon which there appears to be a diversity of opinion, and which I wish to present to your consideration, that you may compare it with your own experience. It is, as to the best time to fell timber, with a view to its durability. To me, it is a matter of much surprise, that the opinions of practical men are not uniform and settled upon this subject—a subject so important to almost every man in society, and particularly to those who have any interest in civil and naval architecture. The subject appears to be

as unsettled in Europe as in this country, or rather the prevailing opinion in both countries is probably erroneous. It appears to be the more general opinion in Europe and in this country, and the practice has conformed to this opinion, to fell timber in the winter, or while the sap is down; or to be more precisely accurate, in the month of February in the old of the moon. In France, by a royal ordinance of the year 1669, the time of felling naval timber was fixed from the first of October to the fifteenth of April, in the wane of the moon. Napoleon, having adopted the opinion that ships built of timber felled at the moment of vegetation, must be liable to rapid decay, and require immediate repairs, from the effects of the fermentation of the sap, in those pieces which had not been felled in the proper season, issued a circular order to the commissioners of the forests, that the time for felling naval timber should be abridged, and that it should be in the decline of the moon, from the first of November to the fifteenth of March. Commodore Porter, of the American Navy, in a communication which appeared in the American Farmer, gives it as his opinion, that the most proper season for felling timber, with a view to its durability, is in the winter, when the sap has ceased to circulate. He is of opinion that the moon has a powerful influence upon timber, as well as upon many other things.

Notwithstanding this powerful array of authority for felling timber in the winter, while the sap is down, to increase its durability, many experiments have been made which seem to establish the fact that timber cut when the sap is in most active circulation, is most durable. Mr. Benjamin Poor, the owner or occupant of Indian Hill Farm, in this county, in a communication to Gorham Parsons, Esq. published in the Massachusetts Agricultural Repository, states the following fact as within his own knowledge and observation. His grandfather, in the fall of the year 1812, selected two white oak trees, size, situation, general appearance as to age and health and the soil, as near alike as possible. In the month of March following, in the old of the moon, one tree was cut, the timber carried to the mill and sawed into suitable timber and scantling for an ox cart, and put up to

season in the open air. The middle of June the other tree was cut, carried to mill, and sawed as the former, suitable for an ox wagon, and put up in the open air to season, and treated in every respect like that cut in March. In the fall of the year, both parcels of timber were housed and in the spring following an ox cart was made from one, and an ox wagon was made from the other parcel, both painted, and the work alike in all respects. They were used principally for hauling stone, and if there was any difference in the service to which they were used, it was that the June timber had the hardest. They were both housed in winter and commonly remained out in summer. Mr. Poor says, at this time (1821) the one made of timber cut in March is very much decayed, the sides defective, much bruised, and a general appearance of decay, while that made of timber cut in June is perfectly sound, has not given way nor started in the joints, or in any respect appears half as much worn as the other, although it has had the hardest service.

The late Hon. Timothy Pickering, the first President of our Society, whose zeal and intelligence, connected with his long experience and great industry, give to his opinions much value, appears to have been of opinion, that the best time for felling timber trees for durability, is, when the sap is vigorously flowing. He states the following fact, as communicated to him by Joseph Cooper, Esq., of New Jersey, a practical farmer. Mr. Cooper's farm lay upon the banks of the Delaware, nearly opposite Philadelphia, and was exposed to the ravages of the British army while occupying that city. Pressed for fuel, his fences first fell a prey to their necessities, and in the month of May, 1778, they cut down a quantity of his white oak trees; but circumstances requiring their sudden evacuation of the city, his fallen timber was saved. This he split into posts and rails. The ensuing winter, in the old of the moon, in February, he felled an additional quantity of his white oaks, and split them into posts and rails to carry on his fencing. It is now, said Mr. Cooper, twenty two years since the fences made of the May fallen timber were put up, and they are yet sound; whereas those made of trees felled in February, were rotting in about twelve years.

Mr. Pickering treats the notion, that the moon has an influence upon timber or vegetation, as visionary.

I have before said, that it is not yet well settled whether the moon has any influence upon vegetation. It is, indeed, a singular fact, that this subject should remain unsettled even to the present day; and yet it is so far unsettled, that probably one half of our farmers who have occasion to sow a field of turnips, would prefer the old of the moon. I have never had any belief in the supposed influence of the moon, and have generally adopted the opinion, that industry and sunshine will do very well without any aid from the moon. I have generally ranked this opinion of the moon's influence, with those superstitions which would give importance to the circumstance, whether the moon was first seen over the right or left shoulder, or whether an enterprise would be successful commenced on Friday. And yet some men of great science and experience are firm in the belief of its influence.

It would be an amusing exercise to collect the various opinions and facts, both ancient and modern, upon this subject, but it would far exceed the limits of this discourse. I will however remark, that the ancients paid great regard to the age of the moon in the felling of their timber. Their rules appear to have been to fell timber in the wane of the moon, or four days after the new moon; some say let it be the last quarter. Pliny orders it to be in the very article of the change, which happening in the last of the winter solstice, the timber he says, will be immortal. Columella says, from the twentieth to the twenty-eighth day. Cato, four days after the full. Vegetius, from the fifteenth to the twenty-fifth for ship timber, but never in the increase: trees then much abound with moisture, the only source of putrefaction.

Commodore Porter, we have seen, is of the opinion that timber should be felled in the old of the moon to give it durability, and he expressly says that its influence is nearly, if not quite as powerful as the sun. The commissioners of the French forests require such timber to be cut in the old of the moon, and such has been the standing regulation from the year 1669.

Mr. Staples, of Turner, in the County of Oxford and State of Maine, in a communication in the New-England Farmer, describes himself as above the age of seventy years, and during the greater part of that time has been a practical farmer. He removed to this place at the age of twenty-two, when the country was new, and was among the five first settlers, and has given particular attention to the moon's influence on timber, vegetation, &c. He says, that it is a truth, that the moon operates upon the earth and every thing which grows upon it, much more powerfully than is generally imagined. It is also true, that the effects of her operation vary regularly, as she passes through her orbit or monthly course. Timber, cut in the wane of the moon, will be much more durable than it would be if cut between the new and the full moon. Her operations are so grea and so different in the various parts of her orbit, that by cutting one tree three hours before the new moon, and another of the same kind six hours afterwards, and preserving them one year, a very striking difference in the soundness of them will be discovered. If I had known, says Mr. Staples, as much at the age of twenty-two years, as I now do, relative to this subject, I am satisfied it would have benefited me more than a thousand dollars, particularly in clearing hard wood land and in getting durable timber for buildings of all kinds, and for sleds, carts, &c.

He says, I have found by experience that fruit trees set out in the wane of the moon, and particularly on the last day of the last quarter, are more likely to live and be flourishing, than when set out at any other time. I have proved by experiments, for ten years in succession, that an apple tree limb or graft ,cut off in the month of May, about three hours before the moon changes, and carefully set out, will grow and do well.

Another writer says, that in the months of May, June, and July, oak trees, in the new of the moon, will readily part with the bark, when, in the old of the same moon, the bark will adhere closely.

Such are some of the opinions and facts to support the af-

firmative of this question; but opposed to these opinions may probably be found most of the scientific and practical agriculturalists of the present day. Doctor Dean and Colonel Pickering, men of great experience, practical knowledge and accurate observation, consider these notions of the moon's influence as visionary. There are certain operations of the moon upon the earth, which are obvious and admitted by all. It affords us light by night, it turns the earth in some degree from its elliptical orbit, it occasions a small oscillation in the earth's axis, it causes the ebbing and flowing of the sea, and a like effect upon the atmosphere. But heat, which is the cause of vegetation, has never yet been discovered in the collected rays of light from the moon. Experiments, made at the Royal Observatory in Paris, have proved, that the light of the moon condensed by a powerful lens, had no effect whatever in altering chemical products, though very sensibly and easily affected by the light of the sun. Another fact is, that the most opposite weather in different parts, take place at the same instant of time, and of course under the same phases of the moon.

It was probably from opinions prevalent in the days of Solomon of certain influences in the heavens, that he was led to make the mild rebuke. He that observeth the wind shall not sow, and he that regardeth the clouds shall not reap.

I now come to a topic, which, although more immediately connected with the department of horticulture, is still within the objects of this society. I refer to the cultivation of fruit trees.—We are told that man, in his primeval state, as he came fresh from the hands of his creator, and, arrayed in purity and innocence, was placed in a garden of fruits to dress and to till it. This employment, so congenial to the purity and perfection of his original character, has lost nothing of its favorable influence in leading the mind to virtue and happiness.

It has often been a matter of surprise to me, that the attention of our farmers has been so little directed to the cultivation of fruits, and especially, when we consider, that they are strongly urged to a consideration of this subject, by every motive of profit, health and pleasure. There is nothing which a farmer can raise

upon his farm with so little trouble and so great profit as valuable fruit trees ; and yet nothing is more rare than to see a farm house with a variety of valuable fruit trees attached to it. The most that we usually find is perhaps a few old apple trees, which show the marks of long neglect, and perhaps one or two decaying pear trees, bearing hard and crabbed fruit. With but a few hours labour every year, a great variety of the best fruits may be obtained. Our climate is exceedingly favorable for the cultivation of apples, pears, cherries and plums. These are trees usually of long life. The apple tree will continue in bearing fifty or sixty years. But a few years since there was an apple tree in the garden of the Wyllys family in Hartford, Connecticut, which was set out by the old Secretary, before the middle of the seventeenth century. The pear tree is usually of longer life than the apple. The old Endicott pear tree in Danvers was planted by Gov. Endicott in 1630, and is more than two hundred years old. Although much decayed it still bears fruit. The cherry and plum tree often live to a great age. It is therefore not one of the least considerations in planting these trees, that we are rendering a valuable service to generations which are coming after us.

As to the matter of profit, I would inquire in what manner an acre of ground, in the ordinary course of cultivation, can be made so profitable, as in the cultivation of fruits. Good fruits will always find a good and ready market. After the trees are set out the ground may be cultivated for many years, with little or no injury to the crop, and with great benefit to the trees. The trees themselves will require little other labour than pruning, and this may require one day annually. If the fruit be judiciously selected, it would sell in the market for more than the whole crop of corn, potatoes or grain, and pay for gathering and marketing. Even in the Newburyport market, good peaches will bring from three to four dollars a bushel, cherries and plums from four to five dollars, pears from one dollar fifty cents to two dollars, and apples one dollar a bushel. Take for instance a premium crop of corn or any other grain, after deducting labour &c. fifty dollars would be a liberal amount for profit, and yet I cannot

but think an acre of good fruit would yield a profit of four times this amount.

Fruit is also one of the greatest luxuries which God, in his providence, has given to man. Have you not been at the festive board loaded with all the dainties which wealth and taste could collect from this and other climes? And have you not seen that those ripened in our own sunshine have been always preferred? What foreign fruit can compare with the mellow blushing apple, the luscious pear, and the peach which fills the room with its fragrance? And yet all these we may have with very little labour and very little expense. If I am told that accidents often attend the cultivation of fruit, which disappoint our expectations, I would inquire what crop of the farmer is not liable to accident? Frost and drought, which often injure fruit, are no less injurious to tillage crops.

Ripe fruits also contribute greatly to health. I have seldom known a family of children, accustomed to the daily use of ripe fruit, who have much occasion for a physician. It prevents in both old and young dysenteries, cholics, and various other ills which flesh is heir to, and gives the form of health and strength so essential to our happiness. This is a cheap medicine, much cheaper than that presented by a physician, which we must pay dearly for, and his visit beside.

Every farmer should be well acquainted with the operations of grafting and budding. It is an art attended with no difficulty and may be learned in one hour. A little practice will enable any person to perform the operations with great rapidity and success. I deem a knowledge of these simple arts so important, that I would make the knowlegde of them an essential part of a young gentleman's education.

The peach is probably the most short lived tree of all our fruit trees, but it is renewed with very little trouble. Plant a peach stone in the place where you want a tree to grow, and it is very sure to come up and flourish. The better way is, however, to have a nursery. Take a few feet of ground in the garden and in the fall plant a number of stones. At two years' growth the tree may be budded with fruit which you know to be excellent,

and in the fall of the year the tree may be transplanted to the place where you wish it to stand. Let it have a southern aspect, at the south side of the house or barn, or on the south side of a hill, and it will for several years produce fruit abundantly, which will amply repay all your labour and trouble. When it decays let it be renewed by another. In the same manner other fruit trees may be produced.

It is a happy circumstance for New England, that agriculture is considered among her most honorable and useful employments. Of those who have taken a deep and lively interest in its success, and given the result of their experience for the benefit of the public, we name with no common emotion Timothy Pickering, our late President, who was distingushed, not less for his rank in the army of the revolution and in the councils of the nation, than for his unwearied and successful devotion to agriculture. His mortal remains now repose in the bosom of that earth, which when living, he so industriously cultivated, while his spirit walks abroad to cheer and encourage and elevate his agricultural brethren.— But we are not left alone. There remain to us living examples of all that is honorable, beneficent, manly, in Lowell, Wells, Prince, Parsons, Perkins and many others. These men, with ample fortunes, cultivated minds, and refined taste, have given a character to agricultural pursuits which they did not possess before. They have not only raised two blades of grass, where one only grew before, but they have made the bramble give place to the luxuriant fruit tree. In the society of such men for fellow labourers, who would not be proud to be a farmer. To the clergy of our society we are much indebted for countenance and aid. Coleman and Perry not only "point to heaven and lead the way," but they teach to strew this thorny path of earth with fruits and flowers. With such company our employment will be honorable, and circumstances may render it profitable.

REPORTS.

No. I. ON MILCH COWS AND HEIFERS.

The Committee on Milch Cows and Heifers, beg leave to submit the following report:—

When it is considered how great a portion of our food is furnished by the cow, from infancy to old age; how much of the quick and ready profits of the farm are dependant upon her, it cannot certainly be a matter of indifference what qualities she possesses.

It is sometimes suggested that the pecuniary interest alone of every farmer will naturally lead him to the best selections of stock. This is undoubtedly true when he knows them. This Society is calculated to greatly assist him in his resolution, and bring the best stock immediately in his way, and to have a tendency, even, to force them upon the careless and inattentive.

Your committee are of opinion that the exhibition of cows and heifers to day does great credit to the county. They have found it very difficult to decide upon those best entitled to premiums, while all were so good.

They have awarded the first premium for cows to William Jewett of Newburyport, for his red cow four years old—ten dollars.

They have awarded the second premium to R. Augustus Merriam of Topsfield for his white faced cow five years old—seven dollars.

They have awarded the third premium to Gyles M. Jaques of West Newbury, for his speckled cow eight years old—five dollars.

There were some other valuable cows exhibited by William MacKinstry, Charles Nelson and David Rogers.

They have awarded the first premium for Heifers to Hector Coffin of Newbury, for his 3 year old heifer "Fairy,"—seven dollars.

They have awarded the second premium to Anthony Chase of Haverhill, for his red two year old heifer, five dollars, which constitute all the premiums offered by the Society.

There were many other very valuable heifers exhibited which did not come within the rule, and which we hope will be competitors another year. We will name some of them, Gyles M. Jaques' two heifers together with his cow constituted a very rich pen of animals.

Aaron Crumby's heifer was very superior. Jesse Shelden, Moses Colman, Samuel Hood, Thomas B. Spofford, exhibited very promising heifers. The account handed to the committee by Hector Coffin of the pedigree of his heifers is very commendable, it evinces a deep interest in the cause, which we are very happy to witness.

Respectfully submitted by

R. A. MERRIAM.
JEREMIAH COLMAN.
AMOS SHELDEN.
JOHN GAGE.

New Rowley. Sept. 21, 1834.

HECTOR COFFIN'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Milch Cows and Heifers.

Gentlemen—

I present to you for preminm my three year old heifer "Fairy" out of my good native cow Daisy from a good selected native Bull.

Fairy out of "Daisy" (11 years old) was calved April 20th, 1831.

At three weeks old she had what milk she wanted or would suck, and had a trough of indian meal and another of cut potatoes, rack of good hay, and water always by her; at four weeks old she was reduced one teat; at five weeks old two teats; at six weeks old three teats, and at seven weeks old was entirely weaned and put to pasture, continuing to have meal and potatoes a week or ten days longer.

After which, she remained in pasture till housing time in the fall, when she was fed with the best meadow and salt hay; and the two last winters on common meadow and salt hay; being regularly carded daily and kept dry and clean, and during the summer in common pasturage with the other animals, having had no grain or provender of any description since she was a calf, except the week after calving when we gave her a quart of cob corn meal once or twice. She calved a large fine heifer calf the 27th of May last, which was taken away from her the 11th of June. The first milking was five hours after calving, and after the calf had sucked what she would; appearing large to my man, he measured it before giving it to the hogs and found it exceeding six quarts. Not thinking of exhibiting her at the cattle show till within a day or two, have not measured her milk. She has given a very large mess of milk through the summer when the feed was good; and this week, since thinking of sending her for exhibition, have measured her milk and find she gives rising two gallons per day of a rich and excellent quality.

I also send for your examination only, my two year old heifer Venus, out of Violet by "Young Bolivar," a three-quarters improved Durham short horned Bull of first rate pedigree. Violet, a first rate native cow remarkable for her progeny and beauty as well as milking properties. I have not time to go into further detail, except to say she is impregnated so as to come in with her first calf the 1st of June next, with the hope that the grass, with the aid of her great milking ancestry, will stuff out her young udders and will make her worthy of her parentage. Her grand sire, Colonel Powel's Bolivar, of Philadelphia: her great grand sire Cælebs, lately belonging to Major Jaques of Charlestown near Boston, of first blood on the

English herd books. Should she receive your favorable remarks it will gratify, gentlemen, your very obedient servant,

HECTOR COFFIN.

R. A. MERRIAM'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Milch Cows and Heifers.

Gentlemen—

My cow was raised in Canterbury, N. H. is five years old passed, is perfectly gentle and docile, allowing any one to milk or handle her. She will go peaceably against any appearance of fence. She has had three calves, coming in when she was three years old. Her last calf was sold the first of June last at 3½ cents per lb. amounting to between five and six dollars at five weeks old, a season when veal is the most plenty. She has had during the season nothing but common grass feed, entering upon fall feed, so called, about the first of the present month.

The average quantity of milk per day for the last four months has been twenty-six and a half pounds: she has given seventeen quarts in a day. The quality of her milk is thought to be exceedingly good. She has been kept for family use, and her milk used freely, six in the family, and without any reference to this exhibition, besides which she has yielded eight pounds of butter of the first quality in a week.

Recapitulation:—

Peaceable, kind, and docile.

Greatest quantity of milk per day	17 qts.
Average, - - - -	26½ lbs.
Quantity of butter per week, -	8 lbs.

R. A. MERRIAM.

Topsfield, Sept. 25, 1834.

WILLIAM JEWETT'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Milch Cows and Heifers.

Gentlemen—

The Cow I present for your inspection I bought at two years old with two heifer Calves by her side, which were six weeks old July 4th, 1832. She has had ordinary keeping and no other. She brought me her third calf March 12th, 1834, which sucked till July 5th; in June I milked one hundred and fifty gallons of milk from her, since that time we have not been particular to measure, until last evening, I milked eight quarts, this morning six quarts.

Yours,

WILLIAM JEWETT.

Newburyport, Sept. 24, 1834.

This shall certify that I have measured ten quarts and one pint in June when the calf sucked, for morning milking.

ELIZA JEWETT.

No. II. ON THE DAIRY.

The Committee of the Essex Agricultural Society, on the Dairy, consisting of Daniel P. King, Uriah Bailey, John Adams, Daniel Putnam and Benjamin G. Metcalf, Report—

That they consider a well managed Dairy one of the most valuable sources of a farmer's revenue. Our proximity to large towns and manufacturing villages insures a ready market and fair prices. The product of a good cow, for a single season, in milk, butter, cheese and the unsaleable refuse, may be estimated at more than thirty dollars. The same food consumed by other stock will hardly yield to the farmer half that sum. Oxen and horses are necessary, but economy seems to indicate that no more should be here kept than are required for labor. Young cattle may generally be purchased for less money than it would cost to raise them: a promising two year old heifer may be bought of the drover in the fall for about twelve dollars; the butcher pays for a

well fatted calf a month old, nearly half the money, and fodder and feed must be abundant and cheap when the farmer can afford to keep such an animal two winters and three summers for six, eight or even ten dollars.

Like every other part of the farmer's business, the dairy requires attention: the cows must have a constant supply of nutritive food and pure water and salt ocasionally; the dairy room should be clean and sweet and used exclusively for that purpose; the pans and other utensils should be carefully scalded, and neatness and order should pervade the whole department. We forbear to give particular directions for making butter and cheese, referring you to the annexed statements of the competitors, whose success in obtaining the Society's premiums is the highest recommendation of the method pursued by them.

Although the dairy is comparatively profitable, and although its products are a component part in so many of the comforts and luxuries of the table, there are some farmers of our acquaintance who have been obliged to abandon it altogether, or to conduct it on a smaller scale, on account of the difficulty of obtaining skilful and experienced dairy women. And here we have opportunity of proposing to fathers and mothers the question, whether in the varied and refined education of their daughters, some of the most useful and important branches have not been neglected? Whether the more fanciful and ornamental attainments have not been substituted for the lessons of the kitchen and the dairy? Whether some delicate hands have not been so long occupied with the pencil, the embroidering needle and the piano, that they have forgotten, or never learned, the cunning of the skimmer, the cheese tub and the churn? Whether specious elegance has not been more studied than substantial usefulness? The former, indeed, should not be wholly neglected, but the latter are indispensable to the comfort and happiness of the community. An English writer, more noted than esteemed, but who, on some subjects is good authority, in his Cottage Economy, observes:—"I must hear a great deal more than I ever have heard, to convince me that teaching children polite accomplishments tends so much to their happiness,

their independence of spirit, their manliness of character, as teaching them to labour. The person that is in want, must be a slave; and to be habituated to labour cheerfully, is the only means of preventing nineteen-twentieths of mankind from being in want."

It was the benevolent wish of a kind-hearted monarch of France, that every peasant in his dominions might have a fowl for his Sunday dinner: how much more substantial the boon if every family might be blessed with the possession of that most useful animal, the cow, which supplies food not for Sundays only, but for every day and every meal. And this possession is within the reach of almost every family of almost every town in this County. If the practice of keeping cows were adopted by all those who have the ability, much might be added to domestic comfort, and there would soon be no farther complaint of the difficulty of obtaining competent managers of the dairy. Besides the generous contributions of the cow to supply the wants of the family, the children may all learn to milk and the females will learn to take care of it; they will know the value of such animals, will feed them carefully and treat them gently.

On Cheese.

The Committee award the first premium to Samuel Bailey, of West Newbury, of $10 00

The second premium to Jacob Osgood of Andover, of 8 00

A sample of very good cheese was exhibited by Mrs. Jane Tenney, of Byfield, (Rowley) nearly as good as that for which the second premium is awarded.

On Butter.

The first premium on butter made in June, to Mrs. Jane Tenney, of Byfield, $7 00

The second premium on butter made in June, to Gardner B. Perry, of Bradford, 6 00

For the best produce of butter made on any farm in the County, a ample of not less than fifty pounds, there was no claim coming within the rules of the Society, which deserved the liberal premium of twenty dollars, which the Society offers.

The statements were not so explicit as desirable, and as the rules of the Society require.

Very good butter was offered for exhibition only by Captain Hector Coffin. Mrs. Carter, of Byfield, exhibited good Butter, but not in sufficient quantity. Mary M. Merrill, of Newbury, offered very fair butter, but not enough to entitle her to premium. Her statement was deficient. Samuel Bailey, of West Newbury, offered butter of good appearance, but it was not thought to come within the rules of the Society.

The butter and cheese were generally of good quality, and this part of the exhibition was creditable to the Society.

For the Committee,

DANIEL P. KING.

New Rowley, Sept. 25, 1834.

ABSTRACT OF STATEMENTS.

Samuel Bailey states that he began to make cheese June 10, with six cows: July 1, two heifers came in milk: between June 10 and September 10, Mr. B. made 1302 lbs. cheese of similar quality to that exhibited.

The milk is made into cheese as soon as milked, and the curd of two messes of milk is made into one cheese: the curd of the night's milk is warmed before putting it with the morning's.

Jacob Osgood states that he began to make new milk cheese July 7th, and continued till August 23, from the milk of five cows, he made 334 lbs. For his process of making cheese he refers to the statement submitted by him in 1830.

Mrs. Jane Tenney states that she churns the cream of her seven cows when four days old: that the butter is salted in the usual way, and put into a stone pot, covered with a cloth, and then with melted butter.

Rev. Gardner B. Perry states that "the butter exhibited for premium was manufactured between the 1st of June and the 9th of July, and amounts to something more than 25 lbs. It is a part of 83 1-2 lbs made during that time, of which the greater part is now in keeping: the product of three cows.

1st 12 years old, came in first of April.
2nd 7 " " " " middle of April.

Her calf was raised and took full one half the milk till the middle of June.

3rd. 4 years old, came in the last of September, all kept on what is called old pasture, but in the early part of June, occasionally, not habitually, fed at night with hay and a few potatoes. 200 quarts of milk were otherwise disposed of, being a little over five quarts a day.

The butter was made in the usual way and has been kept in the pot on the bottom of the cellar. It is seasoned with one ounce of composition to a pound of butter, made of one part of Saltpetre, one part of white sugar and two parts of salt.

(The committee thought a larger proportion of salt would have been better.)

Through the whole process, it has received no attention but such as might easily be given in any family with the conveniencies usually possessed.

It was churned in a close churn, which I am upon the whole apprehensive is not as good as one open, where the latter can be conveniently used.

No. III. ON IRRIGATION.

The Committee of the Essex Agricultural Society, on Irrigagation, consisting of Daniel P. King, Hobart Clark and Moses Newell, Report:—

That their attention was invited by Mr. Ebenezer Jenkins of Andover, to four acres of mowing land on which he has been making an experiment in irrigation. The field is a sandy gravel, the kind of soil most capable of improvement by watering, and so situated as to be flowed at pleasure. Mr. Jenkins bought of a neighbor the use of the water and the privilege of digging through his pasture for ten years, for twenty dollars; he then built a dam across a constant stream and made a channel about fifty rods in length; by means of this and other smaller ditches, he conducts the water on to his field in such quantities and at such times as he thinks proper. Mr. Jenkins states that it is his

practice to bring the water on the last of April, and to stop flowing about the 25th of June. In the spring of two years out of the four that his land has been in a course of experiments, he has applied a very light top dressing. The experiment has been successful and creditable to the enterprise of Mr. J: the average crop of grass for a number of seasons, according to the statement of several disinterested and judicious farmers, had not exceeded 10 cwt. to the acre: for three past years it was nearly equal to 30 cwt. and the present season, was judged to be two tons to the acre; the quality of the hay is good, and it would command a fair price in the market.

Irrigation, though long and extensively practised in other countries, has been but seldom attempted here. That it might be profitably employed by many farmers is probable, that it has been so employed by Mr. J. is certain. We will offer him a few suggestions; if the trial should not prove them to be improvements, he will have the additional merit of having extended his experiment, and having proved many things, he can hold fast to that which is good.

We think he should commence flowing earlier in the spring, and draw off the water sooner than the 25th of June; his grass would be ripe earlier, and by bringing on the water directly after the hay is housed, he would probably secure a heavy second crop. If his top dressing were applied in the fall instead of the spring, it would protect the grass in the winter, and might be productive of greater advantage. Mr. J. in his statement remarks that "observation and judgment are required to know how and when to apply the water;" we agree with him, and offer our hints with some distrust of our ability to advise him. The writers on the subject whom we have consulted, recommend a course different from his in some respects. They say that the night, and cool or cloudy weather are to be preferred for bringing on the water. They also give a general rule, that no water should be applied, (unless in time of drought,) when the grass is tall and nearly full grown, as it might cause it to lodge, might make it gritty, or give it an unpleasant taste.

In our opinion Mr. Jenkins's experiments and statement are satisfactory, and entitle him to a premium of $20 00

Respectfully submitted by,

DANIEL P. KING.

New Rowley, Sept. 25th 1834.,

EBENEZER JENKINS'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Irrigation.

Gentlemen—

I present you with the following as a statement of my method of irrigating my mowing land. In the spring of 1831, I purchased of a neighbor for twenty dollars, the privilege of conducting the water from a constant brook, through his pasture, for the term of ten years: I then made a canal or ditch about fifty rods in length, after constructing a wooden dam across the brook; and on the 31st of April conducted the water on to one acre of sandy field land. This land has a gentle slope towards the south, had been four years in grass and the average crop was about one half ton. I stopped the flowing of the water, June 25th. The hay when made was estimated by judicious neighbors to be two tons.

In 1832, I continued and extended the experiment. On the acre above named, I obtained about two-thirds as much hay as last year. On the two acres, covered with water, for the first season, I obtained by estimation 3 tons of clover hay. Method of flowing the same as in 1831.

In 1833, I applied a light top dressing of compost manure, which I obtained by ploughing a yard where I had watered my cattle one winter. It amounted to about four cords, was mixed fine, thrown into a heap where it laid through one winter, and was spread in the spring. I obtained this year by estimation from 23 to 27 cwt per acre.

In 1834 in the spring, I spread on about four acres eight cords of compost manure which I bought for $2 50 per cord. The

water was used as in former years. The crop of hay has been estimated by several farmers at from 30 to 40 cwt. per acre.

It is not in my power to detail accurately the manner of using the water, as no two seasons are alike. Observation and judgment are required to know how and when to apply the water. I let the water on whenever we have a severe shower, for the benefit of the wash, which as you will perceive on viewing the land and brook, is great. I consider the water of greater benefit when the sun shines, than in cloudy weather at the same temperature, as the water draws the sun, and the warmer the water is, the faster the grass will grow. In the season of 1832 the frequent rains deceived me: on such sandy land we have seldom rain enough to supply the wants of the grass: in that year I think I did not bring on water enough. The actual expense of my experiment and the top dressing I have named, I estimate at $58 00.

Respectfully submitted by

EBENEZER JENKINS.

Andover, Sept. 11th, 1834.

No. IV. ON CIDER.

The Committee on Cider, conisting of Daniel Fuller, Thomas Perley, William Thurlow and Jesse Putnam, Report as follows:

That there were four barrels of Cider presented for premium, all of which was good, but the committee were of opinion that there was none of an extra quality, and by the rules prescribed them by the Trustees of the Society, do not feel at liberty to award either of the premiums. The committee feel much regret that the liberal premiums offered by the Society for cider of extra quality should not excite more interest among the Agriculturalists of the County of Essex, abounding with fine orchards, and only requiring care in the manufacture, and attention to the fermentation, to produce a beverage hardly surpassed by any of the foreign juice of the grape. And as they have reason to believe that apples are not plenty the present season in the county of

Essex, they indulge in the hope that the leisure will be improved in a laudable competition for the premiums of 1835, should the society offer them as usual.

DEAN ROBINSON, *Chairman.*

No. V. ON PLOUGHING—DOUBLE TEAMS.

The Committee on Ploughing with Double Teams, consisting of Hobart Clark, Moses Newell, Nathan Pearson, Samuel Walton, and Jedediah H. Barker, Report:

That correct ploughing is the first and great lesson to be taught and impressed upon a farmer, and this consists in turning properly a straight furrow at a suitable and regular depth.

That this lies at the bottom, and is the ground work of good husbandry, much more so than farmers in general are apt to imagine.

There were eight teams entered for premium, and eight lots of twenty-eight rods each. One team withdrew; the others ploughed as follows, viz:

Lot	No.	2	Hector Coffin	ploughed	32	furrows	51	minutes.
"	"	3	Jared Kimball	"	25	"	36	"
"	"	4	John B. Savory	"	24	"	35	"
"	"	5	Daniel Moulton	"	32	"	68	"
"	"	6	Samuel Bradstreet	"	32	"	66	"
"	"	7	Jesse Shelden	"	28	"	60	"
"	"	8	William Foster, 3d	"	27	"	65	"

The Committee would observe that the work was in general remarkably well done, several of the lots so nearly equal that they found difficulty in awarding the premiums.

The lots No. three and four, were ploughed remarkably quick but not of sufficient depth, and the furrows considerably wider than others and on the whole not as well turned. It is believed the most of success was mainly owing to the structure of the ploughs.

Lot No. two, was well ploughed but much more time was taken in doing it than any other one.

The four remaining stood very near each other in point of merit, but after a careful examination we agree to report as follows:

The first premium to Samuel Bradstreet, - -	$12 00
The second premium to Daniel Moulton, - -	10 00
The third premium to William Foster, 3d, - -	8 00
The fourth premium to Jesse Shelden, - - -	6 00

All which is respectfully submitted

Per order,

HOBART A. CLARK.

No. VI. ON PLOUGHING—SINGLE TEAMS.

The Committee on ploughing with one yoke of Oxen, consisting of Ames Kimball of Boxford, John Northend of Byfield, David Sawyer of West Newbury, William Spofford of Rowley, and Richard Heath of West Newbury, ask leave to report:

That but three teams were entered, and that number ploughed. The land was laid out in lots of about 20 rods each, and was drawn for and ploughed in the following manner, viz.

Lot No. 1. John Broklebank, of Rowley, his son Jeremiah, a lad 15 years old, ploughman and driver; the work was done in one hour and twelve minutes, 52 furrows. Plough, Howard's improved cast iron.

Lot No. 2. Joseph G. Dummer, of Newbury, Henry Rogers, ploughman and driver; work done in 56 minutes, with 48 furrows.

Lot No. 3. Amos Sheldon, of Beverly, Charles Minot, ploughman, and driver; work done in 45 minutes, with 46 furrows. Both Howard's Plough.

The Committee are of opinion that the work was well done, considering the selection of land, and quality of soil, the land being hard and considerably rocky, but after close inspection of the work, they were unanimous in awarding the premiums as follows, viz.

1st premium to John Broklebank, of Rowley, - - $10
2d premium to Joseph G. Dummer, of Newbury, - 8
3d premium to Amos Shelden, of Beverly, - - - 6

Respectfully submitted by

AMOS KIMBALL, *for the Committee.*

Rowley, Sept. 25, 1834.

No. VII. ON ANIMALS—BULLS.

The Committee on the examination of Bulls, beg leave to Report:

That they have attended to that duty, and find twelve bulls regularly entered for premium, also one bull calf for exhibition only, and after close examination and discrimination to the best of their judgment, they have awarded to Abraham Balch, of Topsfield, for his dark red bull, 2 years and 6 months old, the 1st premium of $10 00

Gideon Currier, of Newbury, for his red bull, the second premium of $5 00

Luke L. Dole, of New Rowley, presented for exhibition a bull calf of native breed, 6 months and 6 days old, of a dark red color, fine form, gentle temper and weighing 505 lbs. This calf had sucked from his birth. To encourage the raising and the patriotism of showing such elegant animals, we think Mr. Dole entitled to the thanks of the community and to a gratuity from the Society, of $2 00

The Bulls offered were of a quality generally to do honor to their breeders and benefit to their race, and they would most cheerfully have bestowed more premiums had the Society granted them.

The Bull is one of the most important animals to the farmer, and great discrimination and judgment should be used in his selection either for the draft or the dairy. For the dairy it is a most important point his maternal ancestors should be great and rich milkers, and his paternal ancestors out of stock known to possess these qualities in great perfection; and no Bull calves

even under these circumstances should be raised except those of most vigorous physical powers, well turned limbs, and compact bodies, with good temper and close smooth hair.

The Bull for procreation is equal in the extension of his race, if properly fed and employed, to 50 or 100 Cows; and one animal of this kind has been known to successfully cover near 200 Cows in a season; which circumstance alone fully proves the necessity of strict attention to every important point in his selection when intended for that purpose; and in raising him should he not continue to possess all the good qualities requisite for such an animal, he should be mutilated and condemned to the yoke or fatted for the shambles. In fact, your committee would wish all the Bulls in Essex to be as formidable as the Bulls of Bashan, and all their progeny to be as strong and healthy as the flocks Jacob gained in the service of Laban.

All of which is duly submitted by

Hector Coffin
William Johnson, Jr. } Committee.
Daniel Adams, 3d.

ON OXEN AND STEERS.

The Committee on Oxen and Steers, having attended to that service, report:—

That there were presented to the committee six pairs of 3 years old, and 3 pairs of 2 years old Steers, all of which were very fine and indicated good attention both in matching and training.

Your Committee were of opinion that George French, Jr. of Andover, is entitled to the Society's first premium of seven dollars, for having the best pair of three year old steers. They also award the second premium to James Ayer of Haverhill, for his brindled steers, five dollars.

Your Committee farther report on two year old steers, that Jedediah H. Barker of Andover, is entitled to the first premium of six dollars. Ralph H. Chandler of Andover the second premium of $4 00

Your Committee were highly gratified with a very large pair of four years old oxen, presented by E. & S. Follansbee, of West Newbury. They were also much pleased with two pairs of five months old Calves, presented by Jonathan Kimball, of Bradford, perfectly trained to the yoke and cart. They would recommend a gratuity of two dollars.

DANIEL FULLER, *Chairman.*

September 24th, 1834.

ON SWINE.

The Committee appointed to examine the Swine, entered for premium, consisting of Moses Newell, James Carey, James Ferguson, and William W. Little, report :—

That there were but two animals of this description exhibited. One, a boar pig, 5 mo. 23 days old, by Wm. Thurlow, of W. Newbury. The other, a boar pig, 4 mo. 21 days old, by Jos. Pearson, of West Newbury. They were both superior animals of the kind.

They award to William Thurlow the 1st premium, $5 00
" to Joseph Pearson the 2d " 3 00

When we take into view the many advantages the farmer experiences from feeding this class of animals, and having them upon his premises, and the great difference of value, between those of the best breeds and those of ordinary quality, it is surprising that so little interest should be manifested, by those whose highest pride it is to be deemed *good farmers*, as not to make a better exhibition of Swine than we have this day witnessed. Should these premiums be continued, we hope they will never again want claimants.

For the Committee,

M. NEWELL.

New-Rowley, Sept. 25th, 1834.

ON HORSES.

The Committee on Horses have with pleasure attended to the duty assigned them, and submit the following report :—

The exhibition of these animals has been highly satisfactory. They regard the improvement of this Stock of great importance, and particularly to this County, where so many are used for stages, and in livery stables. The Committee would suggest that there should be more attention paid to the breaking and bitting of these animals, but are happy to state that there has been some improvement in this respect since this society first offered premiums. The number offered this day was nineteen.

Your Committee were of opinion that the first premium, of $10 00, should be awarded to Enoch Harriman, of Bradford, for his sorrel stud, three years old.

The second premium, of $8 00, be awarded to Uriah Bailey, of West Newbury, for his black mare, three years old.

The third premium, of $6 00, be awarded to Joseph Avery, of Andover, for his dark chesnut mare, four years old.

The fourth premium, of $4 00, be awarded to Erastus Ware, of Marblehead, for his black horse, four years old.

ANDREWS BREED,
DAVID EMERY,
FREDERIC PERLEY,
M. BRIDGE,
EZRA BATCHELDER,
} *Committee.*

New-Rowley, Sept. 25th, 1834.

No. VIII. ON AGRICULTURAL IMPLEMENTS.

The Committee on the examination of Agricultural Implements, of a new invention or improvement, beg leave to report :—

That no new invention was offered for premium, and but one improvement, which was a lever affixed to the cutter of the N. York cast iron side hill plough, so as to bring it more truly to the use of the coulter, on both sides, than any one fixed in the centre of the beam could. This improvement is a simple, but

in the minds of the Committee, a useful one, and they therefore award to Mr. John Follansbee, of West Newbury, a gratuity of two dollars.

Moses Colman, Esq. sent for exhibition his horse rake, made by the shakers of Canterbury, of beautiful construction, every tooth shielded with iron, and a most complete instrument, which had been proved by two years' use.

The field for improvement, though much cultivated within the last fifteeen or twenty years, is still open for the ingenuity of man to exercise his skill in abridging manual labor, and thereby reducing the greatest item of expense attendant on the practical farmer.

The Plough, for which more than a hundred patents have been obtained, since the promulgation of that glorious document, the declaration of Independence, has, by late improvements, arrived to such perfection, that could our oxen, like Balaam's ass, be endowed with the power of speech, they would shout, Howard forever, or, in the more quaint language of the late political times, "Huzza for Howard" the man who has relieved our necks of half their burden, and aided the Harrow in its duties.

The threshing mills have experienced great improvements. The Pennsylvania revolving horse rake is also an implement of great utility, and it still remains for man to apply the horse power to the cutting and spreading, as well as raking of hay. Improvement in the art of corn shelling, so as to combine the separation of the corn from the cob, and the complete cleansing of the corn for use, still remains a desideratum for the ingenuity of man to supply.

With the hope that these suggestions may stimulate inventive minds to action, to supply these deficiencies, we most cordially offer our grateful thanks to all those laborers in this most useful field, who, by their inventions have abridged labor, and thereby benefitted their country.

HECTOR COFFIN,
DANIEL PUTNAM, } Committee.
MOSES NEWELL,

No. IX. ON WHEAT.

SILAS PEARSON'S STATEMENT.

To the Secretary—

The following is a statement of the wheat crop which I entered for premium. The lot of land on which the wheat grew, contained one acre and ten poles. The soil is a yellow loam. It was planted with potatoes for two seasons next previous to the growing of the wheat. It was manured with about twelve or fifteen common cart-loads of manure from the barn yard, each year. No manure was put on the land the present season. It was ploughed about the middle of April, and harrowed and sowed immediately after. Two bushels of *white wheat* was sowed. Previous to sowing, the seed was soaked about twelve hours in water, and one peck of dry ashes was mixed with it, after the water was drained off, for the convenience of sowing. The crop was reaped the first week in August, and threshed in September, and the quantity of sound grain obtained, was *twenty-six bushels*, weighing 58 lbs to the bushel. It is not in my power to be more particular in the statement of facts relating to the cultivation of this crop, as I did not contemplate entering it for premium until late in the season.

At a meeting of the Board of Trustees, Jan. 6, 1835, the foregoing statement, together with the certificate, corroborative of the facts therein mentioned, having been examined,

Voted, That the Society's premium of *ten dollars*, for the best crop of wheat, &c., be awarded to Silas Pearson, of Newbury.

Attest, JOHN W. PROCTOR, Secretary.

RYE.

FREDERIC KNIGHT'S STATEMENT.

To the Committee of the Essex Agricultural Society, on raising Rye.

Gentlemen—

I submit for your consideration, an account of a crop of winter rye, raised on an acre of land, the present year,

(1834.) The land on which said rye was raised, is a light loam. In the spring of 1833 it was manured by spreading two cords of compost manure over it, and also by putting four cords in the hills; it was then planted with Indian corn. On the 14th day of July, 1833, I sowed twenty quarts of rye on said land, among the corn, and hoed it in. There are on the acre sixty apple trees, which are from two to six inches through at the ground.

FREDERIC KNIGHT.

This may certify, that I measured a piece of land for Mr. Frederic Knight, on which was a crop of rye, the present year, (1834,) and found it to contain one acre, and no more.

WADE ILSLEY.

This may certify, that I assisted in reaping, threshing, and measuring the crop of rye on the abovementioned acre of land, and there were twenty-four and a half bushels.

TIMOTHY K. NOYES.

ESSEX, ss. Sept. 24, 1834. Personally appeared, the aforenamed Frederic Knight, Wade Ilsley, and Timothy Noyes, and made oath to the truth of the above statements, by them severally subscribed before me.

SILAS MOODY, Justice of the Peace.

The foregoing statement, having been accidentally mislaid has not been examined by the Trustees—it therefore remains to be considered at their next meeting.

Attest, JOHN W. PROCTOR, Secretary.

February, 20th, 1835.

X. ON DOMESTIC MANUFACTURES.

The Committee on Manufactures, consisting of G. B. Perry of Bradford, William Sutton of Salem, Daniel Noyes of Newbury, and Joseph Shaw jun. of Danvers, have attended to the business assigned them and submit their report.

They recommend to the Society to grant the following premiums and gratuities:

To Mrs. Phebe Lovejoy, Andover, for best carpeting, yard wide, 1st premium - - - $5
To Miss Catherine M. Johnson, Andover, for do. 2d prem. 3
To Miss Hannah Foster, Andover, for best straw bonnets, 1st premium - - - - - 5
To Miss Hannah C. Hardy, Bradford, for do. 2d premium, 3
To Elizabeth L. Perry, " for do. a gratuity, 1
To Savy C. Perry, " for do. " 1
To Misses Symonds, Boxford, $1 each, " 2
To Ruth H. Brown, Haverhill, " 1
To Miss Eliza B. Story, Manchester, for best hearth rug, 1st premium - - - - - 3
To Miss Catherine Dodge, Danvers, for do. 2d premium, 2
To Miss Catharine Putnam, " " a gratuity, 1
To Mrs. Love Bachelder, " " " 1
To Miss C. J. Bartlett, Newburyport, " " 1
To Caleb Pierce, Salem, for sheep-skin mats, handsomely coloured, a new article, a gratuity, - - 2
To Mrs. Susan Kimball, Boxford, for best piece of woollen cloth, 2d premium - - - - 3
To Miss Mercy W. Tyler, Boxford, for best flannel, 2d premium - - - - - 2
To do. for best wrought woollen hose, 1st premium 2
To Miss Betsy Jaques, Newbury, for do. 2d premium 1
To Mrs. E. Culver, Bradford, for best men's half hose, 1st premium - - - . - 1
To do. for linen hose, a gratuity - - - 1
To Mrs. Cowles, Danvers, for best wrought counterpane, 1st premium - - - - - 4
To Miss Agnes Haskell, Newburyport, for do. 2d premium 2
To Miss Sarah D. Smith, W. Newbury, for do. a gratuity 1
To Mary B. Cornell, Newbury, aged 14, Mary C. Noyes, do. aged 11, Rebecca T. Wood, Boxford, aged 5, Anne M. Sawyer, Rowley, aged 4, for wrought quilts, each $1 - - - - - 4
To Miss Lucretia H. Milton, Newburyport, for best wrought lace, 1st premium - - - - 3

To Miss Elizabeth C. Jacobs, Danvers, for do. 2d prem. $2

To Miss Harriet Butler, Newburyport, aged 11, for the best specimen of ingenuity and industry, &c. being bead bags curiously wrought, 1st premium - - 3

To Miss Martha Perkins, of do. for do. 2d premium 2

To Elizabeth W. Wilson, Lucy C. Brown, Helen Janvrin, Susan M. Hodge, Savy C. Perry, Sarah Jane Young, Rebecca E. Brown, Margaret A. Brown, Elizabeth Brown, Mary Ann Shaw, Susan Jones, Caroline E. Greenleaf, Harriet S. Cook, Margaret Horton, under 12 years of age, for work of similar character, each $1 14

To Miss Margaret Gerrish, of Salem, for a great variety of beautiful and neatly wrought fancy articles, from the fibre of the Stock of the Milk weed, (asclepias Syriaca) a new species of manufacture, a gratuity - - 5

To Mrs. Eliza F. Robinson, of West Newbury, for handsomely wrought linen hose and thread, a gratuity - 2

To a Lady of Salem, for a handsome imitation French shawl, a gratuity of - - - - 1

To Mrs. Mary M. Merrill, of Newbury, for a variety of superior specimens of coloring, a gratuity - - 5

To Elijah Upton & Son, of Danvers for specimens of Glue of fine quality, a gratuity - - - 1

To George Hodges of Andover, for best piece of Flannel, a gratuity of - - - - - 5

To Asa A. Abbott, Andover, for cocoons, and several articles of silk, made in his family, a gratuity of - 5

To John Kimball, Rowley, for handsome specimens of dressed leather, a gratuity of - - - 3

To Josiah G. Tyler, Rowley, for ladies' boots, - 1

To Mrs. Enoch Wood, Boxford, for linen diaper, 2d premium - - - - - - 2

To M. M. Kimball, Andover, for a wrought apron, a gratuity - - - - - - 1

To Olive Ilsley, Rowley, for a wrought handkerchief a gratuity - - - - - 1

Amounting in the whole to the sum of *one hundred and eight dollars.*

In presenting this report, they are happy to observe, what indeed must be known to all who have visited the room where the articles were exhibited, that their number was unusually large, and in general of a superior quality. It will be readily perceived that this increase in number, considering the limited time allowed the committee for examination, must increase the difficulty of examining and comparing them so as to judge correctly of their relative merits. All the committee assume is an honest desire to fulfil impartially the trust committed to them, feeling no ways confident that exact justice has in all instances been done.

There were several articles for which premiums or gratuities are awarded, and others perhaps nearly or quite as meritorious, not thus distinguished, upon which the committee would have been glad to have made some remarks. Among them may be mentioned, specimens of different kinds of dressed leather, a great number of very substantial hearth rugs, several pair of linen hose, a variety of beautiful articles manufactured from the milk weed, (asclepias syriaca,) and some interesting specimens of coloring done by Mrs. Merrill of Newbury. But our time did not allow of such discriminate records as would now make our remarks of the best service to the Society.

An unusual number of the specimens exhibited were the work of children from 4 to 12 years of age, many of them executed at leisure hours or between schools, and afford a happy and encouraging evidence of the industry of that interesting portion of our population. Your committee were at some difficulty to determine what should be done in relation to them, but concluded finally, as it was the great object of this Society to encourage industry and the development of the mechanical powers, they would recommend a gratuity of a dollar to each one whose work gave creditable evidence of a desire and ability to do well. Your committee think however, that should the Society comply with this recommendation, it ought not to be

construed into an intimation that the like course would be pursued at subsequent exhibitions.

Perhaps it may be observed with justice that a large proportion of the articles were rather of the ornamental than in the strictest sense of the word of the *useful*—such as are more calculated to *please* than *profit*. Your committee are not enemies to taste and ornament; nor do they suppose because a thing is *good for nothing but just to look at*, that it is therefore worthless. Our benevolent and wise Creator has made, and does from year to year continue to make, many things of which we know no use except that they are *pleasant to the sight;* and we feel willing, more than this, desirous, that the noblest portion of his creatures should in their appropriate sphere endeavor to imitate him. But with the beautiful he has given a still larger portion of what in civil economy is called the useful, or perhaps it may be more accurately expressed, he has rendered the useful attractive by finishing it in a tasteful and ornamental manner. We do not wish any of the specimens had been withheld, nor the attention to things of taste diminished, but we wish with these an increase of those of a more substantial character, and particularly of those where the useful are rendered interesting and attracting by an ornamental and tasteful finish. We are persuaded we shall express the feelings of the Society and of the community generally when we observe that the great and good design of this annual exhibition will be more fully answered, if in subsequent years our young female friends, and indeed those of greater age, together with their highly finished specimens of bead and lace and various fancy work, will also bring well wrought specimens of plain sewing and knitting, garments of common wear, and other necessary and substantial articles of domestic life; things which meet the wants and subserve the interest of every day, and by which even in the busy *forenoon* a family would appear attracting, as well as when at eventide they are ready to see friends and enjoy the sweets of social life.

The county abounds with specimens of the sorts referred to. In very few portions of our country are the principles of taste and economy more happily combined than in our own county.

What we ask is that our annual exhibitions may have their interest and usefulness increased by a more extensive collection of them.

The committee also observe that there were exhibited a considerable variety of fine fruit, of various kinds which they regret to say they had not time particularly to examine. They will take the liberty to suggest the propriety of appointing a committee another year, especially for this purpose. Much good would no doubt result from it.

For the Committee,

G. B. Perry.

As it has been one of the objects of the Essex Agricultural Society to encourage domestic Manufactures—an important branch of which is *coloring*, an art more or less practised in most farmers' families—an art for some beautiful specimens of which gratuities from the funds of the Society have been given——an art which will be still more needed should the culture and manufacture of silk among us be successfully prosecuted to any considerable extent—the committee of publication, believing that it will be interesting to a large portion of the readers of this pamphlet, have procured the following essay to be prepared:—

ON COLORING.

The art of fixing on cloths beautiful colors, although not one of the most necessary, has been made by the fashions, taste, and pride of men, in all ages and nations, one of the most valued of inventions. It is altogether a chemical art. Its theory is now well understood, and is in a high degree interesting to every studious mind, useful to all engaged in manufacturing, or in buying, selling, or consuming colored fabrics. It is, therefore, worthy the attention of all our readers.

Colors, to be permanent, must be combined with the fibres of the silk, wool, cotton or linen of which the cloth is composed. To understand how this can be effected, we must acquaint ourselves with the laws of chemical affinity. Affinity is nothing

more than the disposition or tendency which two or more substances have to unite and form a new compound, differing greatly in some of its qualities from the simple substances of which it is composed; one substance is therefore said to have an affinity for another when on being brought in contact it unites with and assumes new appearances and qualities. For example, if iron and sulphuric acid (oil of vitriol) be brought together they gradually unite and form sulphate of iron (green vitriol or copperas) but the sulphuric acid has a stronger affinity for lime than it has for iron; if, therefore, lime be brought into contact with sulphate of iron, the sulphuric acid quits the iron, seizes on the lime, and forms sulphate of lime (plaster of Paris.) Substances used in dying possess an affinity for the fibres of the cloth and when dissolved in water or some other liquid, and brought into contact, they unite, and change either the color of the fibres, or so change their qualities, as to dispose them to unite with other coloring matter for which before they had no affinity.

The art of dyeing then consists in combining a certain coloring matter with the fibres of the cloth. This process cannot be well performed unless the dye-stuff be dissolved in some liquid, and the particles so separated that their attraction for each other becomes weaker than the attraction for them exerted by the cloth. When the cloth is dipped into this solution, it attracts the coloring matter, and from its stronger affinity takes it from the solvent and fixes it upon itself. The facility with which cloth imbibes a dye, depends on two circumstances, namely, the affinity between the cloth and the dye-stuff, and the affinity between the dye-stuff and its solvent. It is of importance to preserve a due proportion between these two affinities, as upon that proportion much of the accuracy of dyeing depends. If the affinity between the coloring matter and the cloth be too great, compared with the affinity between the coloring matter and the solvent, the cloth will take the dye too rapidly, and it will be scarcely possible to prevent its color from being unequal. On the other hand, if the affinity between the coloring matter and the solvent be too great, compared with that between the coloring matter and the cloth, it will either not take the color at

all, or take it very faintly. Wool has the strongest affinity for most coloring matter, silk the next strongest, cotton a much weaker affinity, and linen the weakest of all. In order, therefore, to dye cotton or linen, the dye-stuff should, in many cases, be dissolved in a liquid for which it has a weaker affinity than for the solvent employed in dyeing wool or silk. Thus we may use iron dissolved in sulphuric acid to dye wool, but for cotton and linen it is better dissolved in vinegar. Was it possible to obtain a sufficient variety of coloring matters having a strong affinity for cloth, the art of dyeing would be exceedingly simple and easy. But this is by no means the case ; if we except indigo, the dyer is scarcely possessed of a dye-stuff which yields of itself a good color, sufficiently permanent to deserve the name of a dye. To obviate this difficulty, some substance must be employed which has a strong affinity both for the cloth and the coloring matter. Substances employed for this purpose, are called mordants. Those chiefly used are earth, or metals, in the form of salts or in solution, tan, and oil. One of the most frequently used is *alum*. This salt is composed of pure clay (alumina) dissolved in sulphuric acid. Into a solution of alum the cloth is dipped, the fibre of the cloth having a stronger affinity for the clay than the sulphuric acid has, unites permanently with it. It is then taken out, washed and dried, and will be found a good deal heavier than before, although the color remains the same, the clay, which now forms a part of it, being perfectly white. The cloth may now be dyed by dipping it in a solution of any coloring matter for which the clay has a strong affinity. The clay and coloring matter may be united previous to the immersion of the cloth, and the fibres will still unite themselves with the compound, but not so equally and permanently as when dipped into each of the solutions separately. But the sulphuric acid has rather too strong an affinity for the clay to yield it readily even to wool. Most dyers, therefore, add to the solution of alum a quantity of tartar. Tartar is composed of potash and an acid found in grapes and some other vegetables, called tartaric acid. When solutions of alum and tartar are mixed, the sulphuric acid quits the clay and seizes on the

potash, dislodging at the same time the tartaric acid, which seizes in turn on the clay just abandoned by the sulphuric acid. The tartaric acid, having a weaker affinity for the clay than the sulphuric acid possesses, yields it more readily to the cloth. Another purpose is also gained: the sulphuric acid remains combined with the potash, and this corrosive substance is thereby prevented from injuring the texture of the cloth. For cotton and linen, which have a weaker affinity to clay than wool or silk, another process becomes necessary. Lead or lime dissolved in acetic acid (vinegar) is poured into the solution of alum. A solution of sugar of lead is frequently used. The sulphuric acid quits the clay and seizes on the lead or lime, both of which, united with this acid, form insoluble powders, which fall to the bottom, and the acetic acid unites with the clay, for which it possesses only a weak affinity, and readily yields it to the cotton or linen immersed in it.

Metallic salts may also be used as mordants. Those of iron and tin are extensively used in dyeing. Iron is used as a mordant in two states, in that of sulphate of iron, (copperas) or acetate of iron, that is, iron dissolved in vinegar or in the acid obtained by distilling wood (pyrolygneous acid.)

Tin is used as a mordant in three states—dissolved in nitro muriatic acid, (a mixture of the acids obtained from saltpetre and from common salt), in acetous acid, and in a mixture of sulphuric and muriatic acids. The nitro muriate of tin is the common mordant employed by dyers. It is prepared in the following manner. Melt block tin and pour it into water briskly agitated with a bundle of small rods,

Take of	this granulated tin -	two ounces,
	Nitric acid -	one pound,
	Water - -	half a pound,
	Common salt or sal ammoniac	two ounces,

mix them together in a glass vessel, and the tin will be slowly dissolved* When nitro-muriate of tin is to be used as a mor-

* When common salt, which is composed of muriatic acid and soda, or sal ammoniac, composed of the same acid and ammonia, is mixed with diluted nitric acid, a part of the nitric acid seizes on the soda or ammonia and sets at liberty a part of the muriatic acid, which mix-

dant, it is dissolved in a large quantity of water, and the cloth is dipped in the solution until sufficiently saturated. It is then taken out, washed and dried. Tartar is usually dissolved in the water along with the nitro muriate of tin. This changes the compound into a solution of the tartrate of tin and nitro muriate of potash. The tartrate of tin is again decomposed by the cloth. The metal quits the acid and attaches itself to the fibres of the cloth, and in this state possesses a strong affinity for coloring matters, and forms with them the most permanent and brilliant dyes.

Tan is also employed, along with other mordants. It is found in nutgalls, oak and hemlock barks, sumach, and in a great variety of other vegetables. It is that part of barks, &c. which has a strong affinity for glue, of which hides are chiefly composed, unites with it and forms leather. It has a strong affinity also for cloth and for several coloring matters. Silk is capable of absorbing a very great proportion of tan, and thereby acquires a great increase of weight. For this purpose alone it is sometimes employed by silk manufacturers. Tan is often employed, also, along with other mordants, in order to produce a compound mordant. Oil is also used for the same parpose, in dyeing cotton and linen.

Besides these mordants there are several other substances frequently used as auxiliaries, either to facilitate the combination of the mordant with the cloth, or to alter the shade of color ; the chief of these are tartar, sugar of lead, common salt, sal ammoniac, sulphate of copper, (blue vitriol) acetate of copper, &c.

Mordants not only render the dye permanent, but have also considerable influence on the color produced. The same coloring matter produces very different dyes, according as the mordant is changed. Cochineal, with salts of iron, produces black, with the salts of tin, scarlet, and with alum, crimson. In dyeing, then, it is not only necessary to procure a mordant which

ing with the remaining nitric acid, forms nitro muriatic acid, (aqua regia) which readily dissolves tin, gold, &c. It is more economical, however, to add sulphuric acid enough to saturate the base of the salt, which sets all the muriatic acid at liberty, and leaves the nitric acid undimiuished.

has a sufficiently strong affinity for the coloring matter and the cloth, and a coloring matter which possesses the wished for color in perfection, but we must procure a mordant and a coloring matter which, when combined together, shall produce the wished for color in perfection.

The colors denominated by dyers simple, because they are the foundation of all their other processes, are four, viz. blue, yellow, red, and black. A few simple directions for dyeing wool, silk and cotton of these colors will now be given. We write for prudent and economical housewives, silk culturists, and agricultural manufacturers, and the means within the reach of such must therefore be kept continually in view, in all the operations recommended.

BLUE.

Indigo is the only substance that can be economically used in families for coloring blue. The best or purest indigo is light, easily powdered, tasteless, almost destitute of smell, and breaks smoothly, that is, with smooth surfaces. Some will float on water, and this is generally the purest. The color of indigo also varies. There is the blue, the violet, and copper colored. Although these may all contain nearly the same quantity of coloring matter, yet they are differently valued, the blue selling 20 per cent. higher than the violet, and from 40 to 80 per cent. more than the copper colored. The blue is preferred by dyers for combination, or solution in sulphuric acid, and the copper colored for the indigo vat, in which it is dissolved in a potash lye, aided by bran, madder, or other vegetable products, in a state of fermentation. Before indigo can be applied and fixed upon the fibre of cloth, it must be dissolved in water. But it cannot be dissolved in water in its blue state; it must be converted to a green or yellow color, and then it readily dissolves, is attracted by the fibres of the cloth, becomes permanently combined with them, and on being exposed to the air becomes again blue. In the solution of the indigo, therefore, consists the whole art of coloring blue. The following are among the most easy and simple methods

of dissolving indigo, or, in other words, forming a blue dye.

FIRST METHOD.

Take indigo, well powdered, one ounce; quick lime, one ounce; potash, two ounces; copperas, two ounces; molasses, half a pint; warm water, one gallon—mix, and stir occasionally, keeping the vessel, of copper, iron, or earthen, well covered and in a warm place. The liquor will soon become green, covered with a copper colored or blue scum. In twenty four hours it will be fit for use. Immerse the stuff to be colored for a longer or shorter time, according to the shade required. The strength of the color may also be varied by using a greater or less quantity of water. A very little practice will enable any one to give wool, silk, or cotton, properly prepared, with this dye a beautiful and permanent blue, of any shade they may choose.

SECOND METHOD—SAXON BLUE.

In this method, the indigo is dissolved by the aid of sulphuric acid, without losing its blue color, but it undergoes a change which renders it less permanent, and is therefore not much used, except for articles not very durable, or when a deep, unfading tint is not considered of much importance. This preparation is kept in the shops, under the name of *Liquid Blue*, or *Chemical Blue*, and is much used for blueing white cotton and linen garments, from which it is readily washed out, even in cold water. It is also extensively used in coloring greens, giving, with yellow, a more brilliant color than the blue obtained by the first method. On wool and silk it is much more durable than on cotton, and on articles which do not require frequent washing may be often used advantageously as a blue dye. It is prepared as follows:

Take indigo, well powdered, one ounce; sulphuric acid, four ounces—mix it in a glass or stone ware vessel, and let it stand twenty four hours, stirring it occasionally—then add one ounce of dried potash. Let it stand twenty four hours longer, add half a pint of water, and bottle it up for use.

Mix a wine glass full of this liquid in a pail full of boiling wa-

ter, and dip the stuffs till they acquire the color desired. More of the liquid must be added when the water becomes nearly clear before the stuffs have acquired a color sufficiently deep.

YELLOW.

There are a great number of imported and native plants, roots and barks, that by the aid of the mordants alum and tin, dye yellow. But the very best of all these, viz. the yellow oak bark, or quercitron bark, as it has been named in England, being very plenty in this county, it seems altogether unnecessary even to mention any other.

To dye 10 lbs weight of cloth, or woollen stuffs, of the highest and most beautiful orange yellow, 1 lb. of quercitron bark, and the same weight of murio sulphate of tin, will be required*; the bark powdered and tied up in a bag of thin cotton or linen cloth, may be first put into the dyeing vessel, which of course must be brass, copper, glass or earthen, with hot water, for the space of six or eight minutes; then the murio-sulphate of tin may be added, and the mixture well stirred two or three minutes. The cloth, previously wet thoroughly with warm water, may be put in and turned briskly a few minutes; the color applies itself in this way so equally to the cloth, and so quickly, that after the liquor begins to boil the highest yellow may be produced in less than fifteen minutes, without any danger of its proving uneven.†

When a bright golden yellow, approaching less to the orange, is wanted, four ounces of the murio-sulphate of tin, and two

* Murio-sulphate of tin. This preparation differs somewhat from the muriate of tin, or nitro-muriato of tin, the method of preparing which is given in a preceding part of this essay. It is prepared as follows: Take six ounces of muriatic acid, and pour it upon about the same weight of tin, granulated as above directed, in a glass vessel. Then pour slowly upon the same four ounces of sulphuric acid, and let it stand in a warm place till the acids saturate themselves with tin, that is, till they will dissolve no more, which will be soon effected, if heat be applied, and gradually without being heated.

† Should a deeper orange tint be desirable, add to the quercitron bark a little madder, perhaps an ounce or less to the pound of bark, according to the color desired. This will greatly increase the beauty of the color, when examined by candle-light.

ounces of alum, and one pound of bark, managed in the same manner as above directed. Pure bright yellows, of less body, may be colored by employing smaller portions of the articles above mentioned.

A good yellow may also be produced by boiling the cloth for one hour in one seventh of its weight of alum dissolved in a suitable quantity of water, and then, without being rinsed, put it into a dyeing vessel with clean hot water, and about as much quercitron bark tied up in a bag, as was used of alum. Boil and turn it as usual, until it takes sufficient color, then dip it in warm lime water for ten minutes, and rinse it well immediately afterwards. Tin, however dissolved, when used in coloring wool or silk, renders the fibres a little harsh, but this may be in a great measore obviated by employing the murio sulphate of tin with a mixture of alum, or alum and tartar, and combining these with the coloring particles of the bark before they are applied to the stuffs.

In dyeing silks, more alum and less tin should be used than is directed for woolens, because tin, unless used sparingly, always diminishes the glossiness of the silk.

To produce a lively yellow on silks, it will be sufficient to boil after the rate of four ounces of bark, three ounces of alum, and two ounces of the murio sulphate of tin, with a suitable quantity of water, for ten or fifteen minutes, and the heat of the liquor being reduced so that the hand can bear it, the silk is to be put in and dyed, as usual, taking care to agitate the liquor continually, that the coloring matter may not subside, until it has acquired the proper shade. By adding very small proportions of *cochineal* to the bark, the color may be raised to a beautiful orange, or even aurora. A similar effect, though less brilliant and beautiful, is prodaced by adding madder to the quercitron.

A YELLOW ON COTTON AND LINEN.

It has been said that the fibres of cotton and linen have not so strong an affinity for clay and tin as those of wool and silk. A somewhat different management, therefore, becomes necessa-

ry in coloring the former goods, from that which is required for the latter. The fibres of linen or cotton are prepared for dyeing by being first boiled in water, with a portion of potash, and afterwards bleached. It should then be soaked in water soured with sulphuric acid, to dissolve and remove all earthy matter, and then be thoroughly rinsed, to free it from the acid. Alum, and not tin, must be used as the mordant, for although tin gives yellows exceeding all others in lustre and beauty, on cotton, they decay very speedily when exposed to the sun and air.

For one lb. of cotton and linen yarn, or cloth, take alum 3 ounces, sugar of lead 1 ounce—dissolve them in one gallon of water, about blood warm, and soak the stuff two hours; take it out, moderately squeeze or wring it, let it then be dried, and then soaked again in the solution of alum, squeezed and dried as before; then let it be thoroughly washed in lime water and dried as before. Let it then be well rinsed and put into a kettle of cold water with three ounces of quercitron bark tied up in a bag; stirring it frequently, gradually raise the water to a boiling heat, let it boil a few minutes only, as longer boiling would injure the color, and take it out, rinse and dry as usual. It has been found that by immersing cotton a great number of times, alternately in the solution of alum and lime water, and drying after each immersion, the color acquires greater body and durability. The reason of this seems to be found in the shrinking of the aluminous basis (the clay) in drying, and thereby making room for an additional quantity to penetrate the fibre after each drying, and the larger the quantity of this substance united or incorporated with the cotton, the deeper and more durable will be the color fixed upon it.

There are other methods of preparing cotton, so that it will take a sufficient quantity of the clay, from alum, without the use of the sugar of lead, and which are, consequently, somewhat cheaper than the one described above.

Take of the roots of our common sumach, (rhus glabrum) dried and chipped, one pound, sal soda four ounces, or barilla half a pound, which is an impure soda used by manufacturers of hard soap, and in two or three gallons of soft water boil them

for one hour, and then strain off the liquor and steep the cotton therein for two or three hours. Take it out of this liquor and steep it for the same length of time in a mixture of warm water and fresh cow dung, rinse it out and dry it. Dissolve three ounces of alum in one gallon of water, soak the cotton in this and lime water alternately, and dye it slowly with the quercitron bark as before directed. By the addition of madder, the yellow may be raised to orange, &c.

Woolen, silk, or cotton goods colored yellow as directed, may be immersed in the saxon blue dye, (second method,) and made to take any shade of green which may be desired.

RED.

CRIMSON—ON WOOL OR SILK.

Provide yourself with the following articles—Alum 1-2 lb., cream of tartar 1-4 lb., Nicaragua wood 1 1-2 lbs.—dissolve the alum and tartar in four pails of water, in a brass or copper kettle, when boiling, put in the cloth, yarn &c., and continue the boiling two hours, then take it out and cool and wash it.—Fill the kettle again with water, put in the Nicaragua wood tied up in a bag, put in the cloth and boil one hour, take it out and wash it, and if you wish to change the color to crimson, add one ounce or more of pearlash to the liquor, and boil again for fifteen minutes.

MADDER RED.

Soak the cloth &c. as directed in the last receipt, then instead of the Nicaragua wood, put into four pails full of water, 1 1-2 lbs. of madder and 1-4 lb. of the nitro muriate of tin, and when blood warm put in the cloth and turn it continually till it boils, take it out immediately and dip it into lime water and turn it for a few minutes without boiling, take it out and wash it, &c. The quantity of dye-stuffs mentioned in these receipts, are calculated for about 2 1-2 lbs. of woolen goods.

SCARLET.

Firstly, color as directed for the most brilliant yellow, then take one ounce of powdered cochineal for every pound of cloth,

and put it into the yellow dye from which the cloth has been just taken, or into a suitable quantity of clean water, with one ounce of murio sulphate of tin. Put in the cloth, and boil it for fifteen or twenty minutes, wash and dry as usual.

To color cotton red, with Brazil or redwood, Nicaragua wood or madder, it must be soaked in alum water, and otherwise managed as directed for yellow, the red wood, &c. being used instead of the quercitron bark.

BLACK.

To dye woolen goods black, perfectly and most durably black, they must first receive an indigo blue, as described in our first method, and be well scoured out afterwards. The mordant used in dying black is iron—sulphate of iron (copperas) is most generally used for wool. There are a great number of dye-stuffs, both native and imported, used in coloring black. Nutgalls are usually considered the best for this purpose, but Bancroft says, and we think correctly, that the bark of the red flowering maple (acer rubrum) so common in swamps in this county, gives "a more intense, pure and perfect black than even galls, or any other vegetable matter within our knowledge." Logwood is a useful addition, especially where the cloth has not received an indigo blue. It certainly improves the appearance of the black dyed from galls and iron, by rendering it more intense, glossy and soft. In fact it seems that almost every coloring vegetable matter for which the fibres of wool have an affinity, adds something to the body of black, and lessens the hardness or harshness which iron gives to wool. Among other articles, therefore, which may be advantageously used in black dyes, are the barks of our common elm and alder, and several species of lichen, or mosses, which grow on rocks, and have long been in use among us for dyeing various cheap colors.

FOR BEST BLACK,

On cloth previously colored blue with indigo, take dried maple bark 12 ounces, or 1 lb. of the fresh undried bark, logwood 6 ounces, elm bark 8 ounces, and boil them in two gallons of

water for one hour. Take out the bark, immerse the cloth, and boil another hour. Then take 5 ounces of copperas, dissolved in 29 lbs. of water, and add it slowly to the liquor in the boiler. The cloth should be kept continually turning in the boiling liquor for two hours. Take it out, cool it, and again soak it in boiling water, to which a small quantity of ox gall or fresh cow dung has been added, another hour. Rinse it out and scour it well with hot water and hard soap.

Cloths not colored with indigo, will take a good black if the quantity of logwood be increased, and the dippings alternately in the decoction of the bark, &c. be many times repeated.

BLACK, ON SILK.

The fibres of silk do not so readily receive the black dye as those of wool. What the woollen dyer effects by three or four dippings, the silk dyer scarcely obtains from twenty. As the affinity of the silk for the soluble part of the galls or maple bark is greater than with the iron, it is thought most advantageous to begin by boiling about one half as much in weight of the galls or bark as of the silk to be dyed, in a suitable quantity of water, for three or four hours. Let it settle, pour off the clear liquor, and macerate the silk in the same for twenty four hours. Being dried and slightly rinsed, the silk is afterwards immersed in a solution of the sulphate of iron (copperas), moderately warmed, and kept therein twelve hours, after which it should be rinsed and immersed in a warm decoction of logwood for several hours, again immersed in the solution of iron, rinsed, again transferred to the decoction of bark, &c., repeating these alternate immersions till the desired color shall have been produced. Iron, dissolved in vinegar, is still better than copperas. A black vat may be easily prepared for coloring silk, by immersing in vinegar old iron hoops, turnings of iron, or iron in small and thin pieces, to which may be added maple bark, the berries and bark of the sumach, oak bark, alder bark, &c., and left to undergo a gradual solution, by the joint action of the acids and acerb vegetable matters. The longer the liquors are kept, the better. In some coloring establishments in Eu-

rope such vats have been kept for ages, being replenished from time to time by additions of the several ingredients above mentioned. By repeated dippings in black dyes, silk may be made to acquire nearly a fourth part more in weight than it possessed before its natural gum had been separated from it by the boiling with soap, a process to which all new silk should be subjected before it it is colored. But the color produced by this excess of black is not so good as it is when no such excess has been employed. As soon, therefore, as the silk becomes sufficiently colored, judging by the eye, it should be rinsed out and passed through a bath containing at the rate of one pound of starch and half a pound of linseed oil, well mixed with six quarts of warm water.

BLACK, ON COTTON.

Cotton may be colored black in the dyes above mentioned for wool and silk. A somewhat different management is however recommended by the best writers on the subject. One, who is considered good authority, recommends making a decoction by boiling the logwood, maple bark, &c. above directed, and pour the clear liquor into a tub. Fill another tub with a like quantity of lime water, and another with the copperas water, formed by dissolving two and a half ounces of copperas to each gallon of water, and while the decoction and lime water are nearly boiling hot, dip and turn the cloth for thirty minutes, take it out, wring and air it; then put it into the copperas water and turn it as usual fifteen minutes, wring and air it again, then dip it in the lime water five minutes, and let it be well washed. If the color does not become sufficiently dense, repeat the operations until the desired effect be obtained. Then dip it in the mixture of starch, oil and water, as directed for silk. Much benefit may also be expected from soaking it a short time, previous to its being oiled, in a mixture of ox gall and water. When the cloth has not been first dyed blue with indigo, more dippings and a stronger decoction of logwood will be necessary. In some great dying establishments the black vat, as directed above, is chiefly used for coloring cotton black, instead of the copperas water, and

is doubtless preferable, when it can be readily obtained. The cloth should be first steeped in a decoction of nutgalls, or the barks above directed, and afterwards macerated and worked several times in the liquor of the black vat, drying it between each of the macerations, and finally, being well rinsed, it is to be dyed with a quantity of maple bark, galls, &c., to saturate the iron imbibed in the black vat. To soften the black so produced, the yarn, &c. is usually passed through a bath of starch and oil, well mixed and stirred, employing for this purpose at the rate of one ounce of oil for each pound of cloth, yarn, &c. This employment of linseed oil gives a soft, glossy appearance to the black dyed upon cotton and linen, renders the color more intense and durable, and is particularly important for sewing thread. But care must be taken not to withdraw the cotton from this mixture till by suitable management the oil has been equally applied to all parts of it.

Having given what we believe some of the best methods of dyeing the four simple colors, and incidentally mentioned some of their compounds, we now proceed to give directions for coloring several of those which are most frequently used, or which have been, or still are, most highly esteemed by mankind. Among these are the purple, once the most costly and valued of colors, worn only by princes and the most wealthy of mankind. The ancient color was produced by a liquor found in small quantities in one or more species of shell fishes. It is yielded by a species of the Buccinum, which resembles in form the garden snail. This liquor is found in a little white or yellowish bag, placed transversely in immediate contact with the shell, near the head of its inhabitant. It is nearly colorless, but when applied to linen, cotton, &c., and exposed to the rays of the sun, it will become green, blue, and finally a most durable purple. Perhaps this animal may be found on our coast, and be advantageously used for marking fancy work, &c. Josselyn, in his 'New England Varieties Discovered,' says—"At Paschataway, a plantation about fifty leagues eastward of Boston, in a small cove, called Baker's Cove, they found this kind of muscle, which hath a purple vein which being pricked with a needle yieldeth a

perfect purple or scarlet juice, dying linen so that no washing will wear it out. We mark our handkerchiefs and shirts with it." But purple, being a compound of red and blue, is more cheaply dyed by the following method. The cloth must be first colored blue, by either of the methods recommended in this essay. The saxon blue (second method) gives the brightest, but least durable color. It must then be boiled with alum and tartar, as directed for yellow, and afterwards dyed with cochineal, employing from half to two thirds of the quantity required for scarlet. Or, instead of using the alum and tartar, the murio-sulphate of tin, as directed for yellow and scarlet, may be used as a mordant, and a more brilliant purple thereby obtained. Silk, previously dyed blue, by the first method, being macerated in the murio-sulphate of tin, sufficiently diluted, may be made to receive a fine and lasting purple, or violet, according to the shade of blue previously communicated, by dyeing it with cochineal. Some varieties of purple and violet may be produced by substituting madder for cochineal, but, though lasting, they will be less beautiful. Brazil wood, Nicaragua wood, and in fact whatever will color red, will give, with indigo blue, purples, often lively and beautiful, but they have but little stability.

ON COTTON.

Cotton, macerated in a decoction of galls or maple bark, employing about one pound of galls to six of cotton, then dried and afterwards soaked in a saturated solution of equal parts of alum and copperas, being again dried, rinsed, and dyed with its weight of madder, will obtain a fast color, which, by varying the proportion of alum and copperas, using more alum the lighter you want the shade, may be made to incline more or less to purple or violet.

GREEN.

Green is a compound of blue and yellow, and we have incidentally mentioned the method of producing it, while treating of those colors. With indigo and quercitron bark, every shade of green may be given to suit the fancy, following the directions

already given. When greens are produced on blues dyed by our first method, the blue part of the color will be most permanent. But the reverse happens when the saxon blue is used. In dyeing silk green, it is thought best to apply the yellow first. Employing a little logwood and sulphate of iron (copperas) with the yellow and blue coloring matters, will change it to a bottle green.

ON COTTON.

Cotton must be alumed, &c., as directed in coloring yellow. This may be done after it has received the blue by method first. Macerating in a strong decoction of sumach, should not be omitted in the process. There are many other compound colors, which may be more cheaply produced by a direct application of coloring matters by a single process. Of such we shall now briefly treat.

CINNAMON COLOR, &c.

A very lasting cinnamon color may be dyed on wool, silk, or cotton, with maple bark and alum.

Hemlock bark, with alum, produces on wool a lasting bright reddish brown, and on cotton a nankin color, which is less durable. With copperas, this bark produces drab and slate colors.

Butternut bark dyes on wool, without any addition, a durable tobacco brown. With alum it will be rendered brighter, and may be fixed on cotton. With copperas, or iron dissolved in vinegar, it communicates to wool, linen and cotton a strong and lasting black ; with alum and copperas, various shades of brown and drab. The bark of several species of walnut gives, with alum, chesnut brown ; with copperas, drabs, &c.

Galls. These are excrescences produced upon several species of oak by the gall-fly. Those in common use are imported, but our farmers would do well to try those found on their own oaks, peradventure they may therein discover another source of income, for unless their use should be superseded by maple bark, galls will always find a market. We have already spoken of their use in dyeing black. It only remains to notice the light

cinnamon fawn color, which galls (like many other vegetables that produce black with iron) afford, particularly on cotton, with alum. Galls communicate a durable nankin color to cotton, after the latter has been macerated in milk, dried, soaked in alum, with one eighth its weight of lime, afterwards rinsed, dried, and steeped in a decoction of this vegetable.

The bark of the cherry tree, and that of the horse chesnut possess the property of producing a greenish olive, with copperas. And chamomile flowers are said to dye wool a durable green, with sulphate of copper (blue vitriol.)

PREPARATION OF WOOL, &c. FOR COLORING.

To prepare wool for dyeing, it must be macerated in warm water, mixed with one fourth of stale urine, or in a tepid solution of soap, employing one pound, with a sufficient quantity of water, to every twenty pounds of wool.

SILK.

New silk is naturally covered with a kind of varnish, or gummy substance, and generally tinged of a yellow color. This must be removed by boiling it with soap and water for one hour and a half. It is sometimes necessary to whiten it still further by the fumes of sulphur, to fit it for lively colors. The sulphur which adheres to it after this operation, must be removed by soaking and agitation in warm water.

The art of applying a variety of colors to the same cloth, cotton, linen or silk, topically, either by the printing block, types, or the pencil, may be interesting to some of our fair friends who add to their accomplishments in the mysteries of housewifery, skill in drawing, and a taste for those fine arts which contribute to the embellishment of their persons. We therefore subjoin a few directions for

CALICO PAINTING.

Let your cloth be prepared by being well bleached, washed, dried, smoothed, and spread on a table, or stretched on a frame,

as may be most convenient. Then draw, with the following preparation, the parts of the figure intended for yellow, green, or red. Alum, powdered, one ounce, sugar of lead half an ounce, warm water three ounces—mix them in a phial, and shake them often for three days ; afterwards add one scruple of potash, and one scruple of powdered chalk, let it stand and settle. Then pour off the clear liquor, and thicken it with gum arabic sufficiently to prevent its spreading when applied to the cloth with the pencil ; add a little powdered charcoal, if you please, to the mixture, to make the drawings more visible. Let it then be thoroughly dried by a fire, heating it as much as can be safely done without scorching it. Then draw with the following, the parts of the figure intended to be black. Take iron filings, turnings, small nails, or iron otherwise divided into small pieces, and put them into vinegar, with maple bark, or galls, sumach berries, and a little logwood—let them digest till it forms a very black ink. Mix with this ink gum arabic, till it is sufficiently thickened, and apply it wherever black is wanted, be it on the alumed parts, or on those before untouched by that mordant. Dry it by the fire as before. Do you want blue or green ? Take indigo one ounce, potash one ounce and a half, quick lime half an ounce, brown sugar three ounces, and boil them in three gills of water, till the mixture loses its blue color and becomes green or yellow, with a copper-colored or blue scum. Keep it in a well stopped bottle, and when wanted for use, pour out a little in a tea cup or wine glass, and drop slowly into it muriatic acid till it cease to effervesce. Then, if it be not sufficiently thickened by the sugar, add gum arabic, and apply it to the parts of the alumed figure which you intend for green, and to parts not alumed, intended to be made blue. Dry again as before. If a dark olive be preferred to a black, or desired as an additional color, dissolve half an ounce of copperas in three ounces of water, and thicken it with gum arabic, and let it be applied to such parts as you wish should assume this color. Sulphate of copper, (blue vitriol) used in the same manner, will give an olive inclining to yellow. In like manner other mordants may be applied, and a great variety of colors produced, by subsequently immersing it

in a decoction of one or more dye-stuffs, as directed below. The cloth must now be soaked in warm water, in which a little ox gall has been infused, and rinsed out, without rubbing, till the gum and loose particles of matter applied by the pencil, are washed out. Let it be now immersed in a decoction of quercitron bark, as directed for a yellow dye, and afterwards dipped in a mixture of warm water and powdered chalk, or weak lime water, and it will be found that the parts alumed have become a bright yellow, the alumed parts to which the indigo was applied have become green, the indigo on other parts remaining blue, the black unchanged, other colors produced on those parts upon which other mordants have been applied, and the remainder of the cloth slightly stained with the bark, which, however, will be readily removed by washing with cold or warm water, or by boiling it with water mixed with bran, and then slightly bleaching it in the sun and air on the grass. If you wish an addition of red, it may be now applied to the white or yellow parts in the following manner. Take alum two scruples, sugar of lead one scruple, nitro-muriate or murio-sulphate of tin one scruple, cochineal two scruples, water three ounces—boil them together, thicken with gum arabic, and apply it with a pencil as suits your fancy ; on the yellow it will produce a scarlet, and on the white crimson. If instead of using the quercitron bark, you dye the cloth with madder, or Nicaragua wood, the alumed parts will become red, the indigoed purple, &c.

The preceding essay has been carefully, though hastily, compiled from Bancroft's Philosophy of permanent colors, and several other treatises on coloring, of good authority. Many of the methods directed we have proved correct, by experiments of our own, and we confidently recommend them to all interested. If the directions given be carefully followed, we doubt not any of the above colors will be obtained in a good degree of perfection. Good dyestuffs, of the kinds mentioned, will be indispensable to success. To distinguish the true quercitron from the bark of other oaks which nearly resemble it, you will do well to soak a small piece of it either in your mouth or in warm water, and dip it in the murio-sulphate or other solution of tin. If it be the

right kind, it will instantly show the brilliant yellow which it gives to cloths. Reader, please to notice the following

ERRATA. Page 61, 17th line from the top, for "bubrum" read rubrum.
" 62, 3d line from the top, for "29 lbs" read two quarts.
" 64, 4th line from the bottom, for "Varieties" read Rarities.

The committee of publication have been favored by the Rev. HENRY COLMAN, of Greenfield, with the following communications, "*On Stock for the Dairy*," and "*On Agricultural Publications in the United States.*" They abound in matters of fact useful to be known and remembered by every farmer, and add to the many obligations this Society is under to this enterprising, practical and scientific agriculturalist.

ON STOCK FOR THE DAIRY.

Live stock, including horses, neat cattle, sheep and swine, is as important a subject as any to which the farmer's attention can be directed. That there are distinct breeds of various and peculiar properties, which render them adapted to the different purposes of labor and food ; that all of them, under proper management, are susceptible of improvement ; that by judicious crossing, comparatively new breeds may be formed, certain desirable properties be extended, increased and propagated, and what we deem defects or faults, remedied or entirely abolished, are points so well established in respect to all the animal creation, so entirely confirmed by experiments within the knowledge of every man who has any pretensions to intelligence, that it would be idle to waste one word in attempting to establish them. That like tends to produce like, and that physical, intellectual, and moral qualities are transmitted from the sire to his offspring, are among those established laws of nature which common observation ascertained long before science attempted to explore, and teach their wide and universal operation ; or experiment, with unhesitating confidence, ventured practically to apply them.

The farmer who disdains or neglects these established truths,

or who fails to act upon them, let the sphere of his operations be as humble as it may be, is blind to his true interest, and can lay no claims to rank among the class of careful and intelligent husbandmen. The attempts and generous efforts, therefore, of those public spirited men who have sought to avail themselves of the long experience and extraordinary advances of older countries in the improvement of their domestic animals, and with the most praiseworthy liberality to spread these advantages among us, entitle them to high regard, and justly place them among the benefactors of the community.

It is with these views, with sentiments of gratitude and respect, that I have regarded the liberal, and in many cases the entirely disinterested exertions and expenditures of gentlemen in various parts of our country, to introduce the best breeds of neat cattle from abroad, and to extend their advantages as widely as possible; and it is with ineffable contempt and disdain that I hear the sneers which the malignant, narrow-minded, and ill-bred, cast upon such patriotic services, and to which I am sometimes impelled to listen. It cannot, however, be demanded that we should hail every innovation as an improvement, or that we should admit without ample inquiry, and the severe test of actual experiment, and exact comparison, that the introduction of any foreign breed of animals, with a view to propagation, must be an advantage. This is a question of fair discussion, and one which is to be settled, not by any imaginary or conjectural standard—not by theories, however plausible—not by mere guesses, or vague reports, unattested by competent authority; but by direct examination,—by simple, authenticated, and incontrovertible facts.

From the first time I ever saw one of the fine animals of the Improved Durham Short Horns, I have been an admirer of this beautiful race, not only for the symmetry of form which they present, but for the wonderful success which has followed the skill, perseverance, and enterprise of those breeders who have boldly attempted to form and propagate a race of animals after their own *beau ideal* of excellence. It has been my good fortune to see many of the choicest specimens of this noble race

which have been brought into the country, and of those which have been propagated from them since their arrival, at the cattle shows at Brighton, Worcester, and Albany; in the establishments of private individuals—at Salem, in the possession of E. H. Derby, Esq., to whose care were entrusted the magnificent animals Admiral, and Flora, sent as a present to the country by Sir Isaac Coffin, whose munificence is above all praise; at Col. Jaques', in Charlestown, who had in his possession Cœlebs, and the matchless bull Bolivar; at the late Mr. Williams', in Chelsea, who had a numerous herd of them; at Hon. John Welles', in Dorchester, who had several valuable cows; at Gov. Lincoln's, in Worcester, who was justly pround of Denton's progeny; at James D. Wolfe's, Esq., in Bristol, whose cows, with their deep udders were magnificent; at Henry Watson's, Esq., in Windsor, where I had the pleasure of seeing the celebrated bull Wye-Comet; at Charles H. Hall's, Esq., in Harlæm, whose Short Horns, and whose Devons, a present from the fine stock of Mr. Coke, contended for the palm of excellence; at Powelton, at the establishment of the most liberal importer and most devoted advocate of this fine race, whose admirable animals were a perfect justification of the enthusiasm with which he regarded them at Albany, where, besides various fine specimens of the stock from different individuals, (whose names, as I saw their animals, but not their owners, only at a public show, I shall be pardoned for not remembering,) I had the gratification of seeing Mr. Van Renssealaer's extraordinary bull of two years old, and Mr. C. N. Bement's imported cow, whose superior in promise and geneal appearance I have never yet seen; at Messrs Percey's, and Rogers', at Hoosic, N. Y., whose stock is admirable, and have been managed with great care; and at Hyde Park, at the noble establishment of Dr. Hosack, where without question, judging from the actual inspection of their yield of milk, as well as their general appearance, I found the most nnmerous and finest family of Short Horn cows that I have seen, or which, indeed, I ever expect to see; and a bull, whose splendid form gave him a just right to preside over such a seraglio.

Greatly, however, as these opportunities have contributed to

my personal gratification, I shall not assume the character of a practised, or in any measure a competent judge. I hold myself as no other than a plain inquirer after truth; much as I have admired their appearance, and delighted as I have been with the encomiums which I have heard passed upon them, and not doubting in any case that great advantages are to result from their introduction into the country,—if no other, the great one of seeing what can be done in such cases by human skill and perseverance,—still I wait anxiously for more facts before I make up my judgment as to the extent of these advantages, and in what particular respects these advantages are to be found. I am aware that I am approaching an exciting subject; I recollect with sorrow the angry collision into which two highly respectable gentlemen were brought on this very matter, and the fear of kindling again in others these slumbering, may I not rather hope, these extinguished fires, has long deterred me from entering upon it. I shall not willingly, however, provoke hostility; I shall engage in no controversy. If there must be contention among the short horns and the long horns, let the cattle settle it among themselves. I go into the field unarmed, and as a non-combatant.

There are various points yet to be settled in respect to these cattle. Their early maturity, a most valuable property, seems to be determined. That they are great consumers is equally admitted. Their general tendency to keep themselves in high condition is not so well settled. In Brighton market they do not sell so well as our native stock, because, as it is believed there, (I have it from the highest authority,) they do not *prove* as well,—that is, do not have so much tallow. It is obvious they can have had but few samples for trial, and those not perhaps of the best kind; there must have been very few indeed, if any, of the pure blood. But a matter which I deem of great importance, especially to the northern section of the country, is whether they are preferable to stock already to be found among us for dairy purposes. Here it is we want facts; exact, authentic, and well established statements of the quantity and quality of their milk; how much milk has been obtained from them; how

many pounds; how many quarts; whether beer or wine measure; how much butter and how much cheese has been obtained from them in a given time; and how at such times they have been managed and fed; and as, in such a case as this, the public advantage ought to be our only object, and the truth must in the end be equally important to all, we respectfully ask gentlemen, who possess these fine animals, to make these experiments and examinations, and fully report them; that if it should appear they are as valuable for dairy purposes as has been represented, the agricultural public may know what a blessing is within their reach; but if it should be found that they are not so productive as animals which have long been possessed among us, we may be induced to further, by more judicious selection, and more faithful and liberal keeping, the improvement of our own native stock.

The only decisive experiment, which has come within my knowledge, is that of a cow, called Belina, owned by John H. Powel, Esq., Philadelphia, from whose milk, in three days in May, 1827, eight pounds thirteen ounces of butter were obtained, which would be equal to twenty and one half pounds per week. This is an extraordinary yield, but it will be perceived that it was a very short trial, and that it was only an individual example. It were greatly to be wished that this public spirited gentleman had given the public further results of the same cow, and likewise the results of similar experiments with others of his noble animals. My own experience with this stock has been singularly unfortunate. I have had seven of them, some full blooded and others half blooded, from Cœlebs, Admiral, and Denton; and, for the quantity and quality of their milk, they have been very inferior, I had almost said worthless, even under every advantage of keeping and attention. I by no means, however, consider my own experience as conclusive; as I know some who have been more fortunate, and I am myself determined upon further trials.

In the absence of this desirable information respecting the produce of the improved Durham short horns, I shall undertake to give some examples of the produce of our native stock, which

are well vouched, and many of which have come under my own observation. They may serve at least as matter of entertainment, if not of useful instruction.

1. A cow owned by C. Oakes, Danvers, Mass. 1816.

In 1813, made	- -	180 lbs. butter.
1814, "	- -	300 " "
1815, "	- - -	over 400 " "
1816, "	- -	484¼ " "

In one week this cow produced 19¼ lbs butter, and averaged sixteen pounds per week for more than three months.

2. A cow owned by Nath'l Nourse, Salem, Mass., 1824, and afterwards by Col. Pickering.

This cow made upwards of twenty pounds one week, and averaged over fourteen pounds per week for four months.

3. Cow— —— Wheeler, Framingham, Mass., 1821.

Eleven lbs. butter in one week. 13 beer quarts at one milking.

4. Cow—N. Sanderson, Waltham, Mass., 1828.

Thirteen and one half lbs. butter per week through the season, on an average.

5. Cow—John Barr, Salem, Mass., 1823.

Average yield for two hundred and sixty eight days, 10¾ beer quarts per day.

6. Cow—John Stone, Marblehead, Mass., 1823.

From June to October, averaged eleven lbs. butter per week.

7. Cow—Luke Fisk, Waltham, Mass., 1824.

Made 12 lbs. butter per week.

8. Cow—George H. Hardy, Waltham, Mass., 1826.

Averaged, for four months, eleven lbs. and three quarters per week.

9. Cow—Rev. John White, Dedham, Mass., 1826.

Gave 12 lbs. butter six weeks in succession—one week, 12 lbs. 13 oz.—3 months, averaged 10¼ lbs. per week—gave 18 quarts milk per day, at times.

10. Cow—N. Peirce, Salem, Mass., 1826.
    3,528 quarts milk per year—nearly 10 quarts per day.
11. Cow—James Robbins, Watertown, Mass., 1827.
    May and June, from 10 to 13 lbs. butter per week.
12. Cow—Ralph Haskins, Dorchester, Mass., 1827.
    18 quarts per day—average 14 to 15 quarts. Before grass feed in April, the cream of two days made $2\frac{3}{4}$ lbs. butter, and was made from $2_{\frac{1}{16}}$ quarts of cream. Two or three minutes in churning.
13. Two cows—Rev. Mr. Phenix, Chicopee, Mass., 1828.
    For several weeks averaged 20 lbs. per week, besides what milk and cream were used in the family.
14. Cow—E. Harris, Moorestown, N. J., 1829.
    32 quarts per day—supposed wine quarts—feed, good pasturage.
15. Cow—Jeremiah Stickney, Rowley, Mass., 1829.
    19 quarts daily—calf, at six weeks old, 196 lbs.—gain $2\frac{3}{7}$ lbs. per day.
16. Cow—W. Chase, Somerset, R. I., 1831.
    Most of the season, 20 quarts milk daily—averaged nearly 14 lbs. butter per week, during the season—120 lbs. made in ten weeks.
17. Cow—Israel Graves, Northampton, Mass., 1830.
    Four years old—one week, 13 lbs. 9 oz. butter.
18. Cow—Isaac Osgood, Andover, Mass., 1831.
    17 quarts milk per day—50 lbs. butter in the month of June.
19. Cow—L. Hosmer, Bedford, Mass., 1830.
    14 lbs. butter per week.
20. Heifer—2-3 years old—L. Hasseltine, Haverhill, Mass.
    14 lbs. butter one week—$18\frac{1}{2}$ lbs. in $10\frac{1}{2}$ days.
21. Cow—Samuel Noah, Danvers, Mass., 1831.
    In 148 days from 2d May, gave $587\frac{1}{8}$ gallons milk—more than four gallons per day, beer measure.
22. Cow—Timothy Flanders, Haverhill, Mass., 1832.
    From 20th April to 22d Sept., besides $46\frac{1}{2}$ gallons milk for family use, made 163 lbs. 4 oz. butter.

23. Four cows—Jesse Putnam, Danvers, Mass., 1830.
Averaged more than 200 lbs. butter each in the season —highly fed.

24. Six Cows—J. Curtis, Marblehead, Mass., 1830.
Average over 181 lbs. butter each, without extra feed.

25. Cow—S. Sergeant, Stockbridge, Mass., 1831.

From 8th April,	1828,	321 days,	381 lbs. 6 oz.
" 16th "	1829,	284 "	298 lbs. 1 oz.
" 5th "	1830,	306 "	318 lbs. 10 oz.
		911 days,	943 lbs. 1 oz.

The above is exclusive of 25 lbs. 9 oz. made while fattening 3 calves, and furnishing a family of four persons with milk and cream.

26. Cow—W. Dickinson, Deerfield, Mass., 1830.
One week, 14 lbs.—first eight weeks after calf was taken away, made 96 lbs. Six quarts of milk made one pound of butter.

27. Cow—H. G. Newcomb, Greenfield, Mass., 1830.
From March 27th to May 25th, made 100 lbs. of butter, and reserved 160 quarts milk. In 14 days, made $29\frac{3}{16}$ lbs. butter.

28. Cow—D. Wait, Greenfield, Mass., 1830.
In one fortnight made 25 lbs. butter. In May, 1832, she produced, in one week, $15\frac{3}{4}$ lbs. butter. Average daily weight of milk, 47 lbs. Measured one day 26 beer quarts.

29. Two cows— —— Hart, Shelburne, Mass., 1834.
Besides milk and butter used for a family of three persons, they sold from these two cows, last season, upwards of 400 lbs. butter—feed, grass only. In June, they made in one week 23 lbs.—one week 25 lbs.—one week 28 lbs.

30. Cow— —— Barrett, Northampton, Mass., 1830.
This cow milked, for one fortnight, every eight hours—at each milking has yielded a pailfull, holding ten quarts—the weight of the milk averaging daily $49\frac{1}{2}$ lbs. Her milk has yielded daily 2 lbs. 5oz. butter—making 32 lbs. 6 oz. in 14 days. From one milking alone, 1 lb. 6 oz. were

made, which will give 4 lbs. 2 oz. butter in one day, from one cow—the butter was of a superior quality, and brought a high price in this market.—[Northampton Courier, June 1830.

31. A cow owned in New-London, Conn., yielded 10 quarts milk per day, for 14 successive months.

For the 30th example I have only the authority quoted, which I have no reason to doubt. Most of the others have been authenticated under oath; and most of the cows and the owners I have seen.

I have already extended this communication to an inordinate length. I shall leave it, for the present, without farther comment, and only add, in behalf of myself and the whole agricultural public, that the respected and liberal gentlemen, owners of the improved Durham stock, will confer a great obligation, and add to their patriotic services, if they will favor the public with as exact and full statements, from their own actual experiments, of the dairy produce of their beautiful and valuable animals.

H. C.

Meadowbanks, 8*th Feb.* 1835.

A CATALOGUE OF AGRICULTURAL PUBLICATIONS IN THE UNITED STATES.

The first agricultural work published in the country was "Essays on Field Husbandry," by Jared Eliot, minister of Killingworth, Connecticut. The preface is dated 1747. It was published in Boston in 1760. A second edition was published in the papers of the Massachusetts Agricultural Society, in 1811. It is a sensible, practical, and valuable work.

The next publications are those of the Massachusetts Agricultural Society, which was incorporated in 1792. Their first publication was issued in 1793, and was entitled "Laws and Regulations of the Massachusetts Agricultural Society, with some interesting Extracts from foreign and domestic Publications.

By the Trustees." They published a collection of Papers on Agriculture, annually, for several years; until at length their publications became more frequent, under the title of the Massachusetts Agricultural Repository, which has been discontinued for some time. The collection in my possession consists of ten thick octavo volumes; and embodies much interesting and highly valuable information.

The Philadelphia Society for promoting Agriculture was established in 1785. The first volume of their Memoirs was published in 1808; the last in 1826. They consist of five volumes 8vo; and are full of experimental and useful instruction.

The Pennsylvania Agricultural Society, under the auspices of John Hare Powel, Esq., to whom the Agricultural public are largely indebted, have published two octavo volumes; the first in 1824, entitled "Memoirs," &c.; the second in 1827, entitled "Hints to American Husbandmen"; both of them embellished with valuable plates, and filled with important matter.

The Society in the State of New York for the Promotion of Agriculture, Arts, and Manufactures, issued four quarto volumes of "Transactions"; the first in 1792, the fourth in 1799,—highly honorable to the gentlemen concerned in them, at the head of whom was Chancellor Livingston.

The Board of Agriculture in the State of New York published three octavo volumes of Memoirs; the first in 1821, the third in 1824. They were printed and generously distributed at the expense of the State. I consider them as absolutely invaluable; and as having rendered the highest service to the agricultural community.

The Albany County Society likewise published some Agricultural Tracts, of which I am in possession of two numbers; whether others were published I have not been able to ascertain.

The Essex Agricultural Society, in Massachusetts, have published thirteen octavo pamphlets; the first in 1818, the last in 1834. They contain several valuable papers; useful and interesting reports of farms and stock; some addresses from Col. Pickering, an intelligent, enthusiastic and practical farmer, well

known to the agricultural community; and other communications of which we leave others to speak.

These comprise all the reports of Agricultural Societies in the country which have been given to the public in a pamphlet or book form, of which I am in possession; though I believe an Agricultural Society, both in New Hampshire and Connecticut, have issued some publications. Of course I do not include the publication of mere anniversary addresses, though some of them have great value.

Of single publications by individuals, we have had a respectable number, and most of them highly deserving of attention. I will proceed to enumerate those which have come within my knowledge. I have mentioned above, Eliot's Essays; next followed,

The New England Farmer, or Georgical Dictionary, by Samuel Deane, D.D.

The date of the first publication I cannot ascertain. The second edition was published in 1797. The third, under the editorial care and emendation of Thomas G. Fessenden, learned in the science, in 1822.

The Experienced Farmer, by Richard Parkinson, of Doncaster, Eng., Philadelphia, 1799, 2 vols. 8vo; and a Supplement on Turnip and Pea Fallows, printed in Washington city, 1801. This man's works, for I have likewise his Treatise on Live Stock, published in London, seem to me to deserve little confidence.

The Rural Socrates, or the History of Kliyogg, a celebrated philosophical Swiss Farmer, was republished in Hallowell, Me., in 1800, under the care of Benjamin Vaughan, LL.D., formerly member of the British Parliament; and with notes from the pen of this most learned and excellent man. All I shall say of this work at present, is, that for its practical utility, as presenting a most admirable example of industry, economy, perseverance, decision, and good sense, and for its fine moral tendency, it is not surpassed by any book that I have ever met with, saving, of course, that with which no other is to be put in comparison.

Essays and Notes on Husbandry and Rural Affairs, by I. B.

Bordley, 8vo. The date of the first publication not ascertained; mine is the second edition, 1801.

The Pennsylvania Farmer, a selection from the most approved Treatises on Husbandry, by Job Roberts, 12 mo. pp. 224, published in Philadelphia, 1804.

The American Gardener's Calendar, by Bernard McMahon, 8vo. pp. 648, Philadelphia 1806.

Forsyth on Fruit Trees, republished about the same time.

A Complete Treatise on Merinos, by Mr. Tessier, 8vo. pp. 175, 1811.

Every Man his own Cattle Doctor, by Francis Clater, 12mo. pp. 256, Philadelphia, 1815.

Elements of Agricultural Chemistry, by Sir Humphrey Davy, republished in Boston, 1815, 8vo. pp. 406.

The Code of Agriculture, by Sir John Sinclair, 8vo. pp. 424, republished at Hartford, Conn. 1818, with valuable notes by the American Editor.

Arator—a Series of Agricultural Essays, 12mo. pp. 239, Petersburg, Virginia, 1818. Mine is the sixth edition. It was first published about 1800. It is a work highly esteemed, and has had great influence.

The Farmer's Assistant, by John Nicholson, 2d ed. 1820, Lancaster, Pa. A work of decided merit, and highly recommended.

Treatise on Agriculture, by a Practical Farmer, (understood to be the Hon. John Armstrong,) Albany, 1820, 8vo. pp. 168. A compendious view of the subject; of first rate excellence.

Husbandman and Housewife, being valuable directions in Agriculture and Domestic Economy, by Thomas G. Fessenden, Bellows Falls, Vermont, 1820, 12mo. pp. 190.

The Farmer's Manual, by Frederick Butler, Wethersfield, Conn., 1820, 12mo. pp. 224. A practical and useful work.

Willich's Domestic Encyclopædia—first American edition, edited by James Mease, M.D.; 2d American edition, by Thos. Cooper; in 3 vols 8vo., reprinted in Philadelphia, 1821. A work highly useful.

The American Orchardist, by James Thacher, M.D., Boston, 1822, 8vo. pp. 226.

Letters of Agricola, by John Young, 8vo. pp. 462, Halifax, Nova Scotia, 1822. These letters were first published in the Acadian Recorder, in weekly numbers, and the author's name concealed. Their effects in the Province, and the strong interest which they excited, were very great. They were afterwards republished in a volume. Though in a British Province, they properly belong to American agriculture. They are written in a highly interesting style, are full of information, and display great learning and power.

Nature and Reason Harmonized in the Practice of Husbandry, by the late John Lorain, Philadelphia, 1825, 8vo. pp. 563. This book is full of good sense and practical information, delivered in a verbose and repulsive style ; but there is no book on the subject, with which I am acquainted, more deserving of the attention of an intelligent and practical farmer.

Compendium of Cattle Medicine, by James White, 12mo. pp. 233. Republished from the English edition, in Philad., 1827.

Manual on the Mulberry Tree, by James H. Cobb, 12mo. pp. 68, Boston, 1831.

Essay on Calcareous Manures, by Edmund Ruffin, Petersburg, Virginia, 1832, 12mo. pp. 242.

Treatise on Poultry, Cows, and Swine, by B. Moubray. Reprinted from the sixth London edition, and adapted to the United States, by Thomas G. Fessenden, Editor of N. E. Farmer. 12mo. pp. 266, Boston, 1832.

The Complete Farmer and Rural Economist, by Thomas G. Fessenden, 12mo. pp. 374, Boston, 1834. The established and known competency, ability and industry of the author of this work, are a sufficient guaranty of its merit and value.

The Congress of the United States have likewise caused to be printed and distributed through the country, two valuable Treatises on the Cultivation and Manufacture of Silk, and one on the Cultivation of the Sugar Cane.

To the above are to be added a work on Apples and Fruit, called, I think, American Pomology, and published in Philadelphia, with beautifully colored plates—the author to me unknown, and some works of Mr. Wm. Prince, Long Island, and

Mr. John Kenrick, of Newtown, Mass., on the Grape and other subjects of Horticulture, of which, as I have never had the pleasure of meeting with them, I am not able to speak.

There are, likewise, the Agricultural Works of Wm. Cobbett: his edition of Tull's Horse-Hoeing Husbandry, published in New York; his Year's Residence in America; his American Gardener; and his Cottage Economy, which has been republished here. The style of Cobbett, for clearness, animation, and power, is not surpassed by any writer in the language. He gives much good advice and many valuable directions, but little reliance can be placed upon his bold and extravagant assertions. His work on the cultivation of Indian Corn, published in England, with a title page of paper made from the husks of the plant, is an exceedingly amusing and piquant treatise.

A new System of Shoeing Horses, by Joseph Goodwin, was republished in Boston, 1821; with notes and additions by John B. Brown, M. D., 12mo. pp. 139.

The Gentleman's Pocket Farrier; reprinted from the English copy in 1832. Boston, 18mo. 34.

I cannot have a doubt that the above list is very imperfect, but it will show at least something of what has been done in the country, and it may assist and induce others to endeavor to render it more nearly complete.

I proceed next to enumerate the periodical Publications in Agriculture, which are issued in a weekly, monthly, or quarterly form, for the instruction and animation of the agricultural community.

First in order was the American Farmer, published weekly in Baltimore, and edited by John S. Skinner. This work is still continued under a new editor. I am not able to ascertain the date of its commencement, but it must have reached its eighteenth year. In 4to., 8 pages.

The New England Farmer. Edited by Thomas G. Fessenden. Boston, 4to., weekly, 8 pages. Now in its XIII vol.

The New York Farmer. Edited by Samuel Fleet. Monthly, 32 pages. New York. In its VII vol.

The Genesee Farmer. Edited by Luther Tucker. Weekly, 8 pages. Rochester, N. Y. In its IV vol.

Goodsell's Genesee Farmer. Edited by N. Goodsell. Weekly, 8 pages. Rochester, N. Y. Discontinued in October last.

Maine Farmer. Winthrop, Maine.

Cultivator. Albany. Monthly, 16 pages. J. Buel, J. P. Beekman, and J. D. Wasson.

Farmers' Reporter, Cincinnati, Ohio. It has undergone various mutations in form—8vo, 4to, now folio. Monthly.

Northern Farmer. Newport, N. H. Once a fortnight, 8 pages, 4to. Now extinct. Two vols. published.

Southern Agriculturist. Monthly, 8vo. Charleston, S. C.

Ohio Farmer and Western Horticulturist. Batavia, Ohio.

Southern Planter. Macon, Georgia.

Farmers' Register. Edmund Ruffin, Editor. Richmond, Virginia, 8vo, monthly. Now in the second volume. To this intelligent farmer the public are under great obligations for an able Essay on Calcareous Manures, mentioned above.

There is a "Farmer and Gardener," in the German language, published at Wilkesbarre, Penn.

To these are to be added the Quarterly Journal of Agiculture, Mechanics and Manufactures, published in New York, by Minor and Challis, in large 8vo, 250 pages each number, and abounding with drawings and models in the arts.

The Plough Boy was for some time published at Albany, N. York, and the American Farmer's Magazine, at Washington, but the latter, it is believed, never lived beyond the first number.

Besides these, many of the country newspapers devote a considerable portion of their papers to agriculture; and the most valuable articles in the agricultural journals are copied, and in this way spread over the whole country.

Two Horticultural Journals have recently made their appearance in Boston, in very handsome dress. One, the American Gardener's Magazine, conducted by C. M. and P. B. Hovey; and the other, the Horticultural Register and Gardener's Magazine, edited by Thomas G. Fessenden; both monthly, 8vo, and containing about 40 pages each.

Meadowbanks, 27th Jan., 1835. H. C.

STATEMENT OF THE SOCIETY'S FUNDS.

The Committee appointed to examine the accounts of the Society, offer the following statement of the receipts and payments from Jan. 1, 1834, to Jan. 1, 1835, as exhibited by the Treasurer,

Received of the Mercantile Bank two dividends	$42 00
" " Merchants " " "	36 00
" " Salem " " "	17 25
" " Warren " " "	60 00
" " Exchange " " "	48 00
" " Commercial " 0 "	00 00
" of an individual on his note	135 55
" of a new member for admission	3 00
" of the Commonwealth	600 00
Balance brought from last year's account	441 19
Total receipts - - - - - -	$1382 99

CASH PAID FROM JAN. 1, 1834 TO JAN. 1, 1835.

To J. B. Savory, for expenses incident to the exhibition at New Rowley, - - -	$16 75
To J. W. Proctor, compensation voted him as Secretary by the Trustees - - -	50 00
To J. W. Proctor, for expenses incurred by him as Secretary - - - - -	21 83
	$88 58
From this deduct $9 00, admission fees, accounted for by the Secretary to the Treasurer -	9 00
	79 58
Cash paid in premiums by the Treasurer - -	285 80
Cash advanced to be paid in premiums - -	173 00
Cash paid Foote & Chisholm for pamphlets published by the Society - - - -	160 14
Total expended by the Treasurer - -	$698 52

STATEMENT OF THE FUNDS OF THE SOCIETY ON THE 2ND OF JANUARY 1835, AS EXHIBITED BY THE TREASURER.

In the Warren Bank in Danvers			10	shares, par value		$1000 00
" Mercantile "	Salem		7	"	"	700 00
" Merchants "	"		6	"	"	600 00
" Salem "	"		3	"	"	300 00
" Exchange "	"		12	"	"	800 00
" Commercial	"		11	"	"	733 33
Deposit in the Savings Bank in Salem Oct, 16, 1834,						616 12
Notes of hand with satisfactory sureties						592 00
Balance in the hands of the Treasurer						684 47
						$6025 92

We have examined the books and receipts of the Treasurer, with the vouchers accompanying the same, and the foregoing appear to us true and satisfactory statements.

Respectfully submitted

FREDERIC HOWES, } Committee.
DANIEL P. KING, }

Danvers, Feb. 24, 1835.

ESTIMATE OF THE SOCIETY'S EXPENSES, &c. FOR THE YEAR 1834.

Amount of premiums and gratuities awarded	$360 00
Amount of bills for printing, &c. - -	155 14
Expenses paid incident to the Exhibition at N. Rowley	19 50
Postage, Stationary, transportation of pamphlets, &c.	9 87
New England Farmer and postage	3 02
Compensation voted the Secretary	50 00
	$597 53

Attest, J. W. PROCTOR, Secretary.

PREMIUMS,

OFFERED BY

THE ESSEX AGRICULTURAL SOCIETY,

1835.

I. MANAGEMENT OF FARMS.

For improvements and skill in husbandry, taking into view the entire farm, stock, produce &c. with all its appendages.

The best,	thirty dollars.
The second,	twenty-five dollars.
The third,	twenty dollars.
The fourth,	fifteen dollars.

REMARKS.

All claims for these premiums, must be entered with the Secretary, or the Chairman of the Committee, on or before the 15th day of June, the present year.

The Committee will examine the Farms that may be entered, about the 1st of July, and the 1st of September.

An accurate description of the Farm, and statement of the management thereof and produce, will be required to be furnished, by the claimant, to the Secretary, previous to the 1st of December.

As these premiums are offered mainly with a view to induce our best cultivators of the soil and most intelligent farmers, to bring forward their statements, by the aid of which others may become equally successful and intelligent; it is apparent, that the more *minute* and *certain* the information contained in these statements, the more useful they will be.

And the Farmer, who in good earnest, undertakes to place his farm in a condition to be visited and examined by other good farmers, will in the end find a three-fold reward. 1. A liberal premium from this Society. 2. An increase in the produce of his farm. 3. A heartfelt satisfaction in the contemplation of duty well performed.

The Committee to view, the present season, are

DEAN ROBINSON, *of West Newbury*,
WILLIAM JOHNSON, Jr., *of Andover*,
DANIEL P. KING, *of Danvers*,
AMOS KIMBALL, *of Boxford*,
JEREMIAH SPOFFORD, *of Bradford*,
HENRY A. BREED, *of Lynn*,
JOHN W. PROCTOR, *of Danvers*.

II. DAIRY.

1. For the best butter produced on any farm within the county, from the 1st of June to the 9th of July inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibited, with a particular statement of the method of making and preserving the same, seven dollars.

For the second best, six dollars.
For the third best, five dollars.
For the fourth best, four dollars.

2. For the best produce of butter, on any farm within the county, from not less than four cows, in the six months next following the 20th of May, the present year—a sample of not less than fifty pounds of this butter to be exhibited at the anniversary of the Society, *quality* as well as *quantity* to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, twenty dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county, in the months of *June*, *July*, *August* and *September*, in

the present year; a sample of which, not less than one hundred pounds, to be exhibited, ten dollars.

For the second best, eight dollars.

REMARKS.

The Trustees have heretofore been desirous of encouraging the making of good butter and cheese. A large proportion of their premiums have annually been given for these articles. They are easily prepared for exhibition, and can be transported without material injury. They are in a peculiar manner susceptible of improvement, by careful attention to the manner of making and preserving the same. Every person who has ever known the distinction between *good* and *bad butter*, must be astonished when he considers how much the purchaser loses by want of care in the making of this article. It is not too much to say, that the farmers of Essex might *save thousands of dollars* every year, if they would but give proper attention to the management of their Dairies.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as a manure, onnot less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.

For the second best, ten dollars.

IV. FOREST TREES.

For the best plantation of *White Oak Trees*, raised from the seed, not less than one acre, nor less than one thousand trees, in the third year's growth, thirty dollars.

For the second best do. twenty dollars.

For the third best do. ten dollars.

For the best plantation of *Locust Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

For the best plantation of *Larch Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

For the best plantation of *White Ash Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

For the best plantation of *Chesnut Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

REMARKS.

Notice of intention to claim any of these premiums, the present season, must be given to the Secretary, by the 15th of June. The Committee to examine the plantations are

JAMES H. DUNCAN, *of Haverhill*,
ANDREW NICHOLS, *of Danvers*,
GARDNER B. PERRY, *of Bradford*,
JOSEPH KITTREDGE, *of Andover*,
PICKERING DODGE, *of Lynn*.

A statement in writing of the entire process of cultivation will be required from the claimant.

V. CULTIVATION OF MULBERRY TREES, SILK, &c.

1. For the best plantation of White Mulberry Trees, not less than half an acre, twenty five dollars.
2. For the second best, twenty dollars.

3. For the best nursery of White Mulberry Trees, not exceeding two years growth, twenty dollars

4. For the second best, fifteen dollars.

☞The foregoing were offered the last year, to be paid the present year.

5. For the best Silk, produced and reeled within the county, amounting to at least one pound, seven dollars.

6. For the second best, five dollars.

7. For the most valuable parcel of Silk, produced by the enterprise of one family, the present year, and exhibited either in cocoons, reeled, or manufactured, seven dollars.

8. For the second best, five dollars.

☞ The same parcel not to be entitled to more than one premium.

9. To the person who shall be found in the autumn of 1837, to have improved or increased his present means of prosecuting the culture of Silk to the greatest extent, and upon the most economical and practical plan, within this county, twenty dollars.

10. To the second greatest extent, fifteen dollars.

11. To the person who shall fit up a building, room, or apartment, which, from its size, shape, fixtures, means of ventilation, &c, &c., shall be judged best calculated to secure the health and growth of the silk worm, afford the best convenience for feeding, cleaning the shelves or stands, and fixing the arches, &c. for the cocoons, and which from its simplicity and economical structure shall be such as may be generally adopted by those who may engage to a considerable extent in the silk culture, a premium of thirty dollars.

REMARKS.

All applications for the foregoing premiums must be accompanied with statements of the expense of time and money incurred, the whole management of the trees, worms, &c., the method of reeling and manufacture of the silk, and whatever may be necessary to enable the committee, and all concerned, to judge of the expediency of encouraging the farmers of the

county generally to engage in the culture of silk, to estimate the benefits which may result to others from the knowledge of the experiments and practices of the claimants, in the prosecution of this new and interesting business.

It is the object of the Society to reward valuable improvements only, and consequently it will not feel bound to pay the premiums offered, unless something superior, more valuable, and better of its kind, is exhibited than those nurseries, plantations, and specimens of silk, &c., for which premiums have heretofore been given. On the other hand, gratuities will be given should any valuable invention or improvement in the cultivation of the white or Chinese mulberry trees, the management of silk worms, the manufacture of silk, or any thing calculated to promote the object in view, be exhibited, and for which no particular premiums are offered.

Applicants for the ninth and tenth premiums will bear in mind that it is for the amount of food for silk worms which their trees, in 1837, shall be adjudged capable of producing, more than their trees, if any they have, produced last year, (1834,) that these premiums are offered, and that a statement of the number and condition of their trees the present spring, certified by disinterested witnesses, will be required. These premiums are designed to effect two objects—the planting of new nurseries, and the improvement and preservation of nurseries and plantations for which premiums have been paid by this Society. The Committee to whom this subject has been referred by the Trustees, cannot dismiss it without once more calling the serious attention of the farmers of Essex county to the culture of silk. It is a product which can never fail to find a market, and which we have every reason to believe can be produced here as well as elsewhere. Discouragements and difficulties, as in every other business which is new to those who undertake to practise it, must be encountered, but patience and perseverance will conquer them all. "Believe it, or not," says one of our most intelligent and gifted editors,* "men of New England, your prosperity is yet to depend chiefly, if not altogether, upon agriculture

* John Neal, Esq., Portland.

and manufactures, and the sooner you understand this, the better. We must have a home market equal to that of China, one day or another. Even commerce, at no very distant day, will be but a losing trade with our people, if they have not laid a foundation for supplies and exports which are hardly dreamed of now. See what has become of our West India trade, our lumber trade, and our *lumber districts*, impoverished by their own apparent prosperity, like the winners at a gaming table or in a lottery. A few made rich at the expense of a whole neighborhood of paupers. Neglected lands, neglected morals, neglected bridges, highways, school houses and meeting houses. But so it must ever be, where money is not *worked for*, *steadily* and *honestly*, and acquired *gradually*."

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, twelve dollars.

For the second best, eight dollars.

VII. PLOUGHING.

I. DOUBLE TEAMS.

For the best performance in ploughing, twelve dollars.
For the second, ten dollars.
For the third, eight dollars.
For the fourth, six dollars.

II. SINGLE TEAMS.

For the best performance in ploughing, ten dollars.
For the second, eight dollars.
For the third, six dollars.
For the fourth, four dollars.

REMARKS.

Double teams will be required to plough not less than one sixth of an acre, and single teams not less than one eighth of an acre. Double teams not less than *seven* inches deep. Single teams not less than *five* inches deep. The ploughs must be of the best construction, the furrows truly cut, and well turned. The whole must be done in a workmanlike manner. So many premiums have already been awarded for ploughing, and so great have been the improvements in the construction of ploughs, that nothing less than the best of work will be satisfactory. Those who intend to be competitors in the ploughing match, must give notice to the Secretary, on or before the Monday previous to the Exhibition. Persons residing more than ten miles from the place of exhibition, can have their teams, intended to be used in the field, fed at the expense of the society, the night previous, by calling on B. Goodridge, at the Essex Coffee House, in Danvers.

VIII. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the Show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

IX. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used and

the expense of raising the same; the experiment to be made in the three winter months, twenty dollars.

For the second best, fifteen dollars.

For the third best, ten dollars.

☞ These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for three years.

X. CIDER.

For the best barrel of cider that shall be produced at the Exhibition in 1835, made within the county, a premium of fifteen dollars.

For the second, eight dollars.

REMARKS.

If the cider offered is found worthy of the *first* premium, it will be taken to be used at the table, without any additional payment. The claimant must furnish the committee with a statement in writing of the entire process of making and preserving the cider. It must be the pure juice of the apple, unadulterated by any other ingredient.

XI. CULTIVATION OF WHEAT & RYE.

For the best conducted experiment in the raising of wheat, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of rye, on not less than one acre of land, ten dollars.

☞ A statement of the produce, the manner of preparing the ground, the kind of seed used, the manner of preparing the same, &c., &c., including all the details in relation to the crop, will be required to be handed to the committee.

XII. ANIMALS TO BE PRODUCED AT THE EXHIBITION AT DANVERS, ON WEDNESDAY, SEPTEMBER 30TH, A. D. 1835.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the county, at least nine months from the day of exhibition, ten dollars.

For the second do. five dollars.

For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence, as to the quantity and quality of her milk, and the manner in which she has been fed, ten dollars.

For the second do. seven dollars.

For the third do. five dollars.

For the best heifer that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, seven dollars.

For the second do. five dollars.

For the best pair of three years old steers, seven dollars.

For the second do. five dollars.

For the best pair of two years old steers, six dollars.

For the second do. four dollars.

For the best boar, five dollars.

For the second do. three dollars.

For the best breeding sow, five dollars.

For the second do. three dollars.

For the best litter of weaned pigs, not less than four, from two to six months old, six dollars.

For the second, three dollars.

XIII. HORSES.

For the best horse raised in the county, not less than *three* nor more than *five* years old, ten dollars.

For the second do. eight dollars.

For the third do. six dollars.

For the fourth do. four dollars.

XIV. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.

For the second best do. do. three dollars.

For the best piece of stair carpeting, not less than twenty yards to be exhibited, three dollars.

For the best straw or grass bonnet, five dollars.

For the second best do. three dollars.

For the best wrought hearth rug, having regard both to the quality of the work and the expense of the material, three dollars.

For the second best do. two dollars.

For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, five dollars.

For the second best do. three dollars.

For the best piece of flannel, a yard wide, and twenty yards in quantity, four dollars.

For the second best do. do. two dollars.

For the best wrought woolen hose, not less than four pair, two dollars.

For the second best do. one dollar.

For the best men's half hose, not less than four pair, one dollar.

For the best silk hose, not less than three pair, two dollars.

For the best piece of linen cloth, not less than twenty yards, four dollars.

For the second best do. two dollars.

For the best piece of linen diaper, not less than twenty yards, three dollars.

For the second best do. two dollars.

For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.

For the second best do. two dollars.

For the best specimen of wrought lace, three dollars.

For the second best, two dollars.

For the best specimen of work, performed by a child under twelve years of age, exhibiting industry and ingenuity,
three dollars.

For the second best do. two dollars.

And should any other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

GENERAL REMARKS.

All claims for Premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his Agent, on or before 9 o'clock, A. M., of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

Claims for Premiums on Farms, must be entered with the Secretary on or before the 15th day of June, the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to increase the funds of the Society; and will not be paid after that time. There will be deducted *twenty per cent.* from all premiums awarded to persons not members of the Society, at the time when the premiums were awarded; except they be for articles of domestic manufacture or to females.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the condition on which the premiums are offered; and gives *notice as required* of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality*.

By order of the Board of Trustees. Attest,

January 6th, 1835. JOHN W. PROCTOR, *Secretary*.

NAMES OF NEW MEMBERS.

In 1833.

DANIEL HALE, *of Newbury.*
MERRILL PETTINGILL, *of Andover.*
DAVID MIGHILL, *of Rowley.*
ABEL NICHOLS, *of Danvers.*

In 1834.

BENJAMIN. G. METCALF, *of Salem.*
JOSEPH GOODRIDGE, *of W. Newbury.*
URIAH BAILEY, "
JOHN FOLLANSBEE, "
ELIPHALET EMERY, "
SAMUEL BAILEY, "
ABIJAH NORTHEY, *of Boxford.*
DANIEL NOYES, *of Newbury.*
ASA A. ABBOT, *of Andover.*

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NOTE. Any citizen of the county can become a member of the Society, by applying to the Secretary and paying *three dollars.* He will then be entitled to a copy of the annual publication, without any additional assessment. As most of the present members joined the Society fifteen years since, it is desirable that our *young farmers* should come forward and enroll their names as members, and take upon themselves the management of an institution designed to promote the public good, and save it from terminating with the lives of those who originated it.

OFFICERS OF THE SOCIETY.

Elected September, 1834.

EBENEZER MOSELEY, *of Newburyport*, PRESIDENT.

HOBART CLARK, *of Andover*,
DAVID CUMMINS, *of Salem*,
JAMES H. DUNCAN, *of Haverhill*,
SOLOMON LOW, *of Boxford*,
} VICE-PRESIDENTS.

ANDREW NICHOLS, *of Danvers*, TREASURER.

JOHN W. PROCTOR, *of Danvers*, SECRETARY.

TRUSTEES.

DANIEL ADAMS, 3D, *of Newbury*.
STEPHEN BARKER, *of Andover*.
ANDREWS BREED, *of Lynn*.
JEREMIAH COLEMAN, *of Newburyport*.
HECTOR COFFIN, *of Newbury*.
NATHANIEL FELTON, JR., *of Danvers*.
DANIEL FULLER, *of Middleton*.
MOSES FRENCH, *of Salisbury*.
EDWARD FORD, *of Beverly*.
FREDERIC HOWES, *of Salem*.
NATHAN W. HAZEN, *of Andover*.
WILLIAM JOHNSON, JR., "
JOSEPH KITTREDGE, "
AMOS KIMBALL, *of Boxford*.
DANIEL P. KING, *of Danvers*.
R. AUGUSTUS MERRIAM, *of Topsfield*.
JOHN NORTHEND, *of Newbury*.
MOSES NEWELL, *of West Newbury*,
DANIEL PUTNAM, *of Danvers*.
JESSE PUTNAM, "
DEAN ROBINSON, *of West Newbury*.
JEREMIAH SPOFFORD, *of Bradford*,
BOWMAN VILES, *of Lynnfield*.
ERASTUS WARE, *of Marblehead*.

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TRANSACTIONS

OF THE

ESSEX

AGRICULTURAL SOCIETY,

FOR

1835.

VOL. II.—NO. V.

PUBLISHED BY ORDER OF THE SOCIETY.

MARCH, 1836.

SALEM GAZETTE PRESS.

1836.

AN

ADDRESS

TO THE

ESSEX AGRICULTURAL SOCIETY,

AT DANVERS, SEPTEMBER 30, 1835,

AT

THEIR ANNUAL CATTLE SHOW.

BY DANIEL P. KING.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM:
PRINTED AT THE GAZETTE OFFICE.
1836.

ADDRESS.

Mr. President and Gentlemen,

The seventeenth anniversary of your Society has brought together the Farmers of the County, to exchange their friendly greetings and heartfelt congratulations ; it has given you opportunity to renew and extend your acquaintance amongst men of common habits, feelings and pursuits — to take by the hand many practical and enterprising husbandmen in whom you have long been interested — men who have instructed and encouraged you by their precepts, their example and their success ; it has redeemed one day from the busy round of a farmer's ever active life and devoted it to social intercourse, and sober, manly enjoyment. Had your Society been productive of no greater benefits, it would still have deserved all the countenance and encouragement which it has received from the State and from an enlightened community. But social enjoyment and an occasional relaxation from the tediousness of business are not the only, nor the principal benefits which have resulted from your association. It has exerted a powerful influence, by awakening a spirit of inquiry and emulation, by introducing new varieties of vegetables and fruits, an improved stock of cattle and improved methods of husbandry, by exposing erroneous, but long cherished opinions, by diffusing knowledge and encouraging enterprise and industry. A worthy clergyman, himself a practical farmer, says that the expense of cultivation in the county of Plymouth had been thought to exceed the amount derived from it ; but that the Agricultural Society has proved that labor and skill can make even despised soils pro-

ductive. "I suppose," says he, "that ten bushels of rye to the acre, twenty of Indian corn, one ton of English hay, and two hundred bushels of potatoes, were formerly considered as average crops. Since premiums have been offered, we have claims for from forty to fifty bushels of rye, from one hundred and fifteen to one hundred and twenty-two of Indian corn, from three to four tons of English hay, and from four to five hundred bushels of potatoes. Our improvements have not been confined to single acres; in several instances the products of entire farms have been more than quadrupled." I will not say that the Essex Agricultural Society has effected so much good, or that it has effected all the good of which it is capable — but I will say, without the fear of contradiction, that your Society has done more good, much more good, than it has ever had credit for. And I ask the observing, experienced, practical farmers, who compose so large a part of this audience, if, within fifteen or twenty years, the produce of many farms within their knowledge has not been nearly doubled? Have not the crops of hay, of corn and of other kinds of grain, increased on an average from fifty to one hundred per cent.? Have not ploughs and other agricultural implements been much improved? Do not you more frequently hear of cows which yield from fifteen to twenty quarts of milk per day, and which make from ten to sixteen pounds of butter in a week? Are not working oxen of handsomer appearance, better trained and more powerful? If you answer yes, as I believe you will with united voices, to what causes will you attribute the improvement? I ask honest, practical, discriminating farmers to what causes they *can* attribute the improvement but to the influence of Agricultural Societies, to the impulse they have given to enterprise, to the spirit of emulation they have awakened, and to the knowledge they have been the means of diffusing? The influence of such Associations is not always direct and obvious; like that of the dew and the air, it is a blessing too common, noiseless and unostentatious to be felt or acknowledged by the inconsiderate and unreflecting. There are few men who will be long content to follow a rough, hilly and circuitous path while their neighbor

travels a smooth, direct and pleasant road which brings him with more expedition and safety to his journey's end: there are few farmers who will be content to toil and drudge from year to year in the same dull round which their fathers followed for a bare subsistence, while they see their more enterprising neighbors in the full tide of successful experiment, becoming richer and more prosperous from having adopted the improved methods of husbandry. Does any farmer seriously complain that he has derived no benefit from Agricultural Societies, that he has not been instructed by their publications, that he has not been enlightened by the knowledge they have diffused? If that farmer has not connected himself with the Society, has not read its publications nor followed its recommendations, it would be no less unreasonable for him to complain that his corn would not vegetate before he had committed it to the earth and while it remained in his granary — it would be no less unreasonable than the complaint of the hypochondriac that he is not warmed by the sun, while he secludes himself in his chamber and bars his doors and his windows. Many farmers have suffered their minds to be prejudiced by an unfounded and unreasonable distrust of Agricultural Societies, as encouraging and sanctioning book farming. It may not be unprofitable to inquire how books on husbandry are compiled. A practical farmer in Andover, for instance, has raised large crops of potatoes, another in Haverhill has had great succes in the cultivation of rye, another in Newbury has raised superior wheat for successive years, and many other farmers in various parts of the county, have been successful in the cultivation of the several crops to which they have given particular attention; actuated by the scriptural injunction to "do good and communicate," they write detailed accounts of their several methods of cultivation and send them to a common friend, a farmer well read and experienced; he carefully examines the communications, received from sources which he knows are entitled to confidence, he arranges them, winnows out the grain, and garners it up in a book. And now is there any thing like legerdemain or cunning in this? Is there any thing suspicious about it? Had you visited any one of the

farmers who have made a communication, and witnessed with your own eyes his field luxuriant with the growing crop, or burdened with the ripened harvest, and heard the detail of his management, you would not have hesitated to believe his statement, nor to adopt his practice. The mere act of publishing it cannot make his statement the less deserving your confidence, nor the improvement the less valuable. We will suppose that for the purpose of making further inquiries and explanations, the gentleman to whom the communications were sent, invites his friends in the different sections of the county to meet him on an appointed day ; they come together, and discuss what methods of husbandry are best calculated to make abundant harvests, and freely express their opinion on all subjects connected with rural economy. These practical farmers derive so much pleasure and satisfaction from the interview, that they resolve to have regular meetings at stated intervals, and for the sake of encouraging experiments, and promoting improvements and industry, they determine, from funds in their possession, to offer premiums to successful competitors. Here is an Agricultural Society, and here is a Cattle Show. Is there in all this any thing of combination or treason ? Is there any thing which threatens the liberties of the people or the safety of the Commonwealth ? Your society has to contend with the coldness and indifference of its friends, rather than with the malice of its enemies — it has no open and declared enemies, and I am sure that you have no wish to conjure them up merely for the sake of giving them battle. You have beat your swords into ploughshares and your spears into pruning hooks — you delight more to train the vine than to bend the bow, to swing the scythe than to wield the lance. The well cultivated field is the field of the farmer's glory ; his highest ambition, to improve it ; if he has doubled the produce of his farm, he feels that he has achieved a nobler victory than if he had conquered armies or subdued empires. And we invite the yeomanry of the county to join in this honorable competition — we invite practical farmers, the men of broad shoulders, muscular arms and strong hands, to connect themselves with the Society, and by their experience

and their example, to help in the promotion of its interests and the advancement of its prosperity. Your united efforts can make this institution an honor and a blessing to the whole farming community. Will you not use your endeavor to strengthen and sustain a Society which was formed for your advantage, and which subsists only for your benefit ? In recommending to you to try experiments and to study the periodicals and books devoted to husbandry, I do not advise you to an universal and indiscriminate adoption of any man's rules or opinions. I would not have a farmer go into the field with a book in one hand and a hoe in the other ; such a practice would lead him to the result of a certain visionary farmer who complained " that the carles and cart avers make it all, and the carles and cart avers eat it all" — the labor and expense of cultivation more than balance the value of the crop. But the farmer should read and ponder and deliberate ; he should study and reflect, and adopt such rules and methods as he finds applicable to his own soil and circumstances. A judicious practice, enlightened by sound theory and science, will effect wonders for Agriculture, the mother and nurse of the arts, as it has done for all her children and dependants. Unless theory and practice walk hand in hand, mutually helping and encouraging each other, we cannot hope that Agriculture will keep pace with the improvements of the day, or that she will ever arrive to the perfection of which she is capable.

But let it not be inferred from these remarks, that the public interest in the subject of agriculture has declined, that the permanence of this Society is in danger, or that its prospects are less promising than they have been. This large and respectable assembly would contradict such an opinion ; the long and regularly increasing list of members would confute it. The number of animals in your pens, the well contested ploughing match, the products of the dairy, the exhibition of manufactured articles, elegant and varied in their qualities, are satisfactory evidence that the usefulness and prosperity of your Society have not declined. The fruits and flowers exhibited on this occasion are witnesses of the increasing interest in the object of your

association, too welcome and beautiful to be overlooked. We hail these signs as omens of good for the future, not doubtful nor uncertain. From the examination of all these fruits and flowers, the products of the earth, the beasts of the field, the beautiful specimens of the cunning workmanship of ingenious hands — all made for man's use and enjoyment — from the liberal abundance of those well furnished tables, we have come up into this temple of the Lord to offer Him the incense of deeply affected and grateful hearts. By hymns and solemn prayer and thanksgivings, we have testified our gratitude for the regular return of summer and winter, seed time and harvest, for His loving kindness which has crowned the year, and for His tender mercies which are over all his works. But our professions of gratitude are like false blossoms on the vine, beguiling us with the hope of fruit, if they are not accompanied by grateful conduct as well as by grateful affections — they are like fungous ears on our corn stalks, fair in their outward appearance, but within full of all uncleanness, if they are not followed by obedient, virtuous lives. To a benevolent benefactor, a proper improvement of the gift is the most acceptable acknowledgment. Have we as farmers made such a practical acknowledgment for the blessings by which we are surrounded ? Have we no neglected corner over which the lazy demon of sloth has long brooded in sluggish inactivity, and which the busy hand of industry would make as blooming and fruitful as a garden ? Have we no meadow abandoned to bulrushes, flags, and croaking frogs, which a little draining and dressing would cover with valuable crops ? Are not our pastures infested with briars, thistles and bushes ? Are there not in our fields hosts of weeds contending with the corn and potatoes for the mastery, and which will certainly gain the victory unless we come to the rescue ? Are there by our walls no belts of bushes, every year making wider and wider encroachment upon our cultivated lands ? Are there in our fields no loose rocks and heaps of stones, obstructing the plough and the scythe, and like blotches on the fair face of beauty, disfiguring the prospect ? Have we no ruinous, dilapidated fences, tempting cattle otherwise orderly and well behav-

ed to overleap the modesty of their nature, and to commit breaches against the peace of the neighborhood ? Have we in our gardens no uninvited, intruding guests, plants which we have neither sowed nor watered, which we might offer as a most acceptable dessert to those epicureans of our establishment, who place the supreme good in pleasure — the pleasure of living at ease, of faring luxuriously, and of growing fat ? Is it not our fault that these idlers have no better employment than to speculate and philosophize ? Have we no rich alluvial deposits in ditches, swamp holes or sunken meadows, from which we might make drafts that would return us a liberal interest ? Have we no naked, hungry, exhausted fields with imploring accents begging us to come and dress, feed and recruit them ? In balancing our accounts, do we find that we owe no man aught except love and good will ? Every good farmer finds it pleasant and profitable to keep a journal in which he notes every day's employments and incidents ; in reviewing ours, do we find no necessary labor neglected ? Is the place where our example and influence are most felt, a pattern of order and neatness, of well regulated economy as well as of a liberal abundance ? Is the place where our affections centre, where we most wish to be loved and hope to be remembered, is our home, the happy abode of peace and harmony and contentment ? Have we discharged our social and moral obligations — our duties to ourselves and to our neighbour ? We profess admiration and gratitude for the air we breathe, for the sun that warms and enlightens and cheers us, for the innumerable comforts of our existence, for this spacious, beautiful and convenient world ; but have we been faithful to that portion of His vineyard over which God has set us as stewards and overseers ? If we can make satisfactory responses to these questions, then have we cause for accumulated gratitude, that in the disposition and ability to improve and enjoy, He has given us the crowning blessing.

An orator with a mind well freighted with learning, or whose lighter imagination soars on bold, rapid and graceful pinions, would lead his delighted audience back into distant ages and over into foreign countries — he would tell you of Italy, once

the garden of the world, now as degenerate in morals as in husbandry — of England, made one great specimen farm by thorough cultivation and plentiful manuring — he would talk to you of Parnassus and Tempe and Helicon, of the beauties of nature, the decorations of art, and the embellishments of fancy. But I will not affect the learning I have not — I will not borrow wings which would but betray my awkwardness in the use of them. And it is not with foreign climes, nor antiquity, it is not with poetry nor fiction, it is not with Hesperian lands nor with Eastern lands, that we, as farmers, have to do. Let us recall our wandering thoughts and fix them on our own times and neighbourhood, on our own farms and homes. It is enough for us to know that farming has always been an honorable pursuit when it has been honorably followed; that it will always be an honorable, profitable and fashionable occupation as long as men continue the somewhat inelegant, but not altogether unpleasant or unnecessary habit of eating and drinking. Let farmers remember that they have inherited a character distinguished for sobriety, honesty, temperance, industry, frugality and manly independence; let them strive to sustain and elevate this character.

But my friends, a grave charge has been preferred against us, seriously affecting our character as good farmers and honest men, and I fear too many of us must plead guilty. We have been called extortionate and austere — not precisely charged with robbing widows' houses or with reaping where we have not sown, but with extorting too many crops from our fields without making them a due return, with exacting too much of them and of withholding their deserved wages: we have been accused of cropping our lands severely without cultivating and manuring them in any reasonable proportion, of mowing our fields many years in succession till their over taxed, exhausted energies can yield us nothing more. The high prices of labor and manure and the difficulty of obtaining them have been alleged as excuses for this thriftless and cruel practice, and there is something of truth and more of plausibility in the defence. As a remedy for these evils and a sure way of improving your land, I can do

nothing better than to recommend to you the method practised for several years with great success by Elias Phinney, Esq. of Lexington. A farmer should use his eyes as well as his hands — he should be willing to learn from the experience of others as well as from his own. From the fields of Lexington we may learn lessons of husbandry as well as lessons of patriotism. There is nothing selfish or exclusive in the feelings of an enlightened and enterprising farmer; with him, next to the pleasure of receiving information is that of communicating instruction. Without offering an apology to Mr. Phinney, I shall make an extract from his Address delivered before the Society of Middlesex Husbandmen and Manufacturers in 1830; nor shall I ask your indulgence for using the sentiments and words of another, for this may be the only part of my remarks which needs no indulgence. "In May 1828, the field, (the soil of which is thin loam upon a gravelly sub soil,) having lain three years to grass, and the crop of hay so light as to be worth not more than the expense of making, with a view of ascertaining the quantity of vegetable matter upon the surface, I took a single foot square of green sward, and after separating the roots and tops of the grasses from the loam and vegetable mould, it was found on weighing to contain nine ounces of clear vegetable substance, giving, at that rate, over twelve and a quarter tons to the acre. This convinced me of the importance of taking some course, by which this valuable treasure might be turned to good account. That a great part of this vegetable matter is exposed to useless waste, by the usual mode of ploughing, cross ploughing and harrowing, must be obvious to any one. In order, therefore, to secure this, as well as the light vegetable mould at and near the surface, which is liable to waste from the same causes, I had two acres of the green sward of this field turned over with the plough as smoothly as possible. After removing the outside furrow slices into the centre of the plough-land, and thereby effecting the double purpose of covering the vacant space in the middle, and preventing ridges at the sides and ends, the field was rolled hard with a loaded roller, by which the uneven parts of the furrows were pressed down and the whole

made smooth. It was then harrowed lengthwise the furrow, with a horse harrow, but so lightly as not to disturb the sod. Twenty cart loads of compost manure, made by mixing two parts of loam or peat mud with one of stable dung, were then spread upon each acre. It was then harrowed again as before, and then the poorer part of the soil, which had been turned up, and remained upon the surface, was thereby mixed with the compost manure. Corn was then planted in drills* upon the furrows, the rows being at the usual distance and parallel with the furrow. At hoeing time the surface was stirred by running a light plough† between the rows, but not so deep, at this or the subsequent hoeing, as to disturb the sod. What Mr. Lorain calls the "savage practice" of hilling up the corn, was cautiously avoided. In the early part of the season, my cornfield did not exhibit a very promising appearance; but as soon as the roots had extended into the enriching matter beneath and began to expand in the decomposing sward, which had now become mellow, and more minutely divided by the fermentation of the confined vegetable substances beneath, than it could have been by the plough or hoe, the growth became vigorous, and the crop, in the opinion of those who examined the field, not less than seventy bushels of corn to the acre. As soon as the corn was harvested, the stubble was loosened up by running a light horse plough lengthwise, through the rows, the surface then smoothed with a bush harrow, and one bushel of rye, with a sufficient quantity of herd's grass and red top seed, to the acre, was then sowed, the ground again harrowed and rolled. The crop of rye was harvested in July following, and the two acres yielded sixty nine and a half bushels of excellent grain, and over five tons of straw. The grass seed, sowed with the rye, took well, and the present season I took, what those who secured the crop judged to be two and a half tons of the very best of hay from each acre.

Thus, with one ploughing, with the aid of twenty cart loads

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* It might be planted in hills, if that course is preferred.

† Mr. P. now uses the cultivator instead of the plough.

of compost manure to the acre, I have obtained two crops of grain and stocked the land down to grass."*

The great object of the farmer is to obtain the most valuable products, with the least possible labor, and at the same time to keep his farm in a state of progressive improvement; by this method large crops have been obtained with a small expense of labor and manure — but some of little faith may object that it is the result of a single experiment, that there may have been something peculiar in the soil or the seasons, that with others it would have been a complete failure, and that most likely the land soon became exhausted. But Mr. Phinney has practised and continues to practise the same kind of husbandry with the same success and with increasing confidence. The field on which he made the experiment which he has so clearly and satisfactorily detailed, has remained in grass till the present season, and has continued to yield two tons of good hay to the acre, without any top dressing. Other farmers have followed the same method on a great diversity of soils, and although a plain field and a loamy soil may be best adapted to the purpose, there are none except very wet or very rough and rocky grounds which cannot be greatly improved by it. There is nothing unreasonable or unphilosophical in this method, and success would seem to follow it as naturally as effect follows cause. I know that there are many farmers who believe that the *good old way* is the best way, but let the most incredulous of these visit the farm of Mr. Phinney, which but fifteen years ago produced but nine tons of hay and which now produces seventy; let him go into those well mellowed fields and see the corn waving in its beauty and ripening into a golden harvest, yielding nearly one hundred bushels to the acre, and potatoes in equal abundance; let him witness all the improvements of that well managed and thoroughly cultivated farm, (which in natural advantages, perhaps, does not exceed his own,) and that sceptical

* William Clark, jun., of Northampton, and Daniel Putnam, of Danvers, have adopted similar methods of husbandry, and have been very successful.

farmer, who went out hesitating and unbelieving, will come home with a settled conviction that Mr. Phinney is a farmer of great skill and enterprise, enlightened by a sound judgment: he will cheerfully admit that his method of cultivation is a great improvement, and he will apply it to his own farm as far as his circumstances will allow. I should not have dwelt so long on this subject, if, from my own observation and the experience of others, I had not been fully satisfied that the adoption of a similar method of husbandry would be beneficial to our own fields. Let the farmers of Essex try the experiment; the expense will be but trifling; the advantages may be great; and if, by chance, they should fail of success, they will have the satisfaction of having at least *attempted* an improvement.

The business of the farmer requires his constant care and inspection; he must not intrust it to another; if he expects his work to be well done, he must do it himself, or at least see it done. How many farmers have been misled by the notion that their respectability and consequence in society is commensurate with the number of their acres, forgetting that it is the *condition*, and not the *size* of their farms, which gives them a character. This desire to be considered the owner of a wide domain has been a fatal snare to many who might have enjoyed their homestead in peace and plenty — it has involved them in pecuniary embarrassments, which have driven them sorrowing from the very fields, perhaps, which their ancestors reclaimed from the wilderness, to seek for themselves and their little ones a habitation amongst strangers, or in some distant, solitary wild, where the voice of a stranger would be welcomed as the voice of a friend. When it is matter of choice, the best sized farm is that which the owner has skill, capital and energy to manage to the best advantage. A mistake similar to this, and of the same disastrous consequences, has led some farmers into extravagance in the size of their houses, extravagance in furnishing them, and extravagance in their style of living. How many kind hearted, pains taking, industrious farmers, forgetting that "it is the eyes of others, and not our own, which ruin us," have been lured by the false glitter to rivet on the chains which have

afterwards galled them to the quick! No man, except a landlord, wants a larger house than will accommodate his family, and occasionally his friends. Let every farmer, then, who is about to build, first sit down and count the cost, then let him consider at how much less expense a house of moderate size is furnished and kept in repair, and how much less labor is required in sweeping and scouring, (it will be prudent to make the calculation, although it may not be prudent to intermeddle with the operation); and then let him seriously reflect how small a house will hold his tried, valued, and true friends. A man of ample fortune will consult his taste — he may think that a large mansion, costly furniture, and a corresponding style of magnificence will increase his happiness — let him try it, for bank bills are as worthless as the seared and withered leaves that are put into circulation by an autumn gale, and specie as valueless as the pebbles washed by the waves of the sea, if they do not contribute to the happiness of their possessor or if they are not in his hands the means of conferring happiness on others. But before the man of wealth indulges in such profusion, if he is a philanthropist, he will remember that his example may be followed by those who cannot so well bear the expense; if he is a father, he will remember that his children will hardly be content with any situation or manner of living inferior to those to which they have been used under the paternal roof.

If I had not already trespassed too far on your patience, I would speak of the importance of domestic manufactures, as affording the only ready and constant market for the surplus productions of your farms, and as indispensable to the real independence of the country — I would say something of the cultivation of mulberry trees and the rearing of silk worms, as affording a profitable and pleasant employment at home for those members of your family whose health and whose virtue might be too much exposed abroad. There are many other topics of domestic economy of great interest, but most of them have been learnedly, or what is better, practically, treated by gentlemen who have addressed you on for-

mer occasions. But there is one subject which is becoming so important, and the evils of which are so general and serious, that you will be disposed to allow it a moment's consideration. I mean the difficulty of obtaining experienced, able and faithful *help*. The complaint has been growing louder and more frequent, and a remedy is most desirable. But a few years since, for the reasonable compensation and the kind treatment they always deserve, we could easily find diligent and faithful young men and young women who were willing to afford us their assistance — and a mutual benefit was received and conferred, and readily acknowledged — it was an exchange of good offices; while they cheerfully gave us their assistance and attention in the labors of the farm and of the house, they were learning the principles of good husbandry and good housewifery — they were preparing themselves for that station in life to which every young man and young woman should be looking forward, to the relation of husbands and wives, to the situation of masters and mistresses of families of their own. A well managed farm and a well regulated household are almost the only schools where this preparatory education can be acquired by the young; they must learn to obey before they can be fit to command; they must learn the lessons of good management before they can practise them. And let them be assured that there is nothing dishonorable or degrading in attending this school, or in learning these lessons, for there is no station or occupation which is not reputable when honorably followed, and they, and they only, are useful and worthy members of society who are engaged in some useful employment. Captivating as the charms of beauty may be, and fascinating as are some of the polite accomplishments, let no young woman rely so much on these means of obtaining admiration and securing affection, as on the ability to make herself useful; for although a lover may be blind, a husband has eyes — although music and painting and dancing and embroidery may be very pleasant amusements, and afford gratification for a leisure hour, there are other hours besides those of dalliance and revelry, and other

senses besides those of seeing and hearing — senses too which have more imperious demands; and there is danger that the wife or the mother who is not prepared to answer these constant demands, beautiful and elegantly accomplished though she may be, will not long appear graceful or lovely in the eyes of her husband. Some circumstances of fortune or station or delicacy of health may make it unnecessary or improper that a woman should perform active labor with her own hands, but there is no rank or station in which a lady can be placed where it is not desirable that she should know how the affairs of her household ought to be managed. I know that I give but cold and feeble utterance to the feelings of this Society in bidding a welcome, a cordial welcome, to that portion of the fairer and gentler sex who have honored this farmer's holiday with their presence — without their encouraging smiles and cheerful assistance, even farming would be dull business. I cannot offer for their consideration a better sentiment than that contained in the words of a learned, elegant, and distinguished foreign lady, who says, " the only celebrity that can increase a woman's happiness, is that which results from the esteem excited by her domestic virtues" — and I will add, there is no praise, no applause, no glory in the wide world more worthy a woman's ambition than the fame of a well regulated household.

But pleasant, healthful and indispensable as the labors of the field and of the kitchen and the dairy may be, and excellent as is the course of discipline both for the body and the mind, there is danger that too many young men and women will prefer what they consider a more fashionable employment and a more elegant education. And you, as a Society, perhaps cannot do much to expose the mistake or to remedy the evil. It has however occurred to me that it would be no perversion of your funds if you were to offer suitable premiums to such faithful, diligent, temperate and skilful man or woman as had remained for one or more years in the employment of any member of the Society; besides, as an additional encouragement and reward for their faithfulness, they

might receive the Society's certificate, accompanied by some useful treatise on rural economy or domestic duties, such as Fessenden's Complete Farmer, for the males, and Mrs. Child's Frugal Housewife, for the females, so that the very means of rewarding, should be an encouragement and guide to greater excellence.

But if as members of this society you can do but little to remedy the evil abroad, as members of a more limited society you can do much to remedy it at home. Fathers and mothers, you stand at the fountain; with the lightest trace of your finger on the yielding soil you can give a direction to the infant stream. You can send it gliding down through verdant fields and flowery lawns, imparting new fertility and beauty, and anon contributing its strength to propel the complicated machinery of industry: or you can send it dashing, foaming over precipices, to join with other impetuous, headlong streams, carrying devastation in their course: or you can suffer it to roll its sluggish way into some stagnant pool, affording a refuge for loathsome reptiles, and poisoning the atmosphere with its pestilential vapors. In infancy, and at home, the deepest and most lasting impressions are made; your children may have able and faithful instructers, but there are many lessons of practical wisdom which are not taught in the schools. The mind of your child is constantly busy — he will be learning a lesson of you when you least think of it. To your child your remark is wisdom; your observation, experience; your opinion, sound doctrine; and your word, a law; your child is learning a lesson from every look and action — but most of all, your example is educating your child. It is a book constantly open before him, and which he is constantly studying. Be careful, anxious father, fond mother, that you insert no page which hereafter you may wish to tear, no line you may wish to blot — be careful that you admit into that much read volume no sentiment which you are unwilling your child should transcribe on the fair tablet within his own innocent bosom.

Fear not that I am about at this late hour to inflict on you a lecture on general education. Schools, academies and colleges have been founded for the education of the mind and the heart;

to these we must leave them ; but what has been done to encourage the education of the hand ? The heart and the mind should indeed be enlightened, pure and undefiled, but the hand must be busy and skilful. The great secret of happiness consists in never suffering the energies to stagnate. Fortunately in the farmer's business there is no want of constant employment — if you can accustom your children to patient and cheerful labor, you have secured for them the means of happiness and independence. In other stations of life there may be unfortunates,

"Stretched on the rack of a too easy chair,

" Who by their everlasting yawn confess

" The pains and penalties of idleness" —

but this mortal sin should never invade a farmer's dwelling. In training your children to a willing industry, do not over-task their strength — let them feel that they can be useful, and that their assistance is valued — There are various employments in the house, the garden and the field that are adapted to their tender years ; never let their labor be such in kind or amount as shall make it disgusting, and if possible make them derive from their labor some compensation in money or relaxation or indulgence ; never withhold the merited praise or reward. Accustom them never to expect another to do for them that which they can as well do for themselves, but to rely upon their own strength, and to trust their own energies. Whatever may be their prospects in life, teach them to depend on their own resources. Help them to cultivate an affectionate, accommodating disposition, moderation in their expectations and moderation in their pleasures. Teach them to reverence God and to love work — " neither to despise labor, nor husbandry, which the Most High has appointed." " Teach them to bear the yoke in their youth, and to do with all diligence whatever their hands find to do" ; so shall you deserve their assistance in the management of your house and your farms ; so shall you secure for them that competence and happiness of which the mischances of this world cannot deprive them. And when you shall have

performed all life's duties and enjoyed all life's pleasures, when your earthly tabernacle shall fall into ruins, when your wearied frames shall find quiet repose beneath the soil you have faithfully cultivated, and when your spirits, like shocks of corn fully ripe, shall be gathered into store houses not made with hands, eternal in the heavens — your grateful children shall arise and bless your memory; they shall be living monuments which shall bear record that you laid for them, in early habits of patient, cheerful and contented industry, the foundation for a manly, virtuous, and honorable independence.

REPORTS.

No. I. ON FARMS.

The Committee of the Essex Agricultural Society, on Farms, consisting of Dean Robinson, William Johnson, Daniel P. King, Amos Kimball, Jeremiah Spofford, Henry A. Breed, and John W. Proctor, *Report* —

That during the two years of their service on that Committee, but one farm has been entered, either for premium or examination. They had anticipated much pleasure as well as individual profit in an opportunity of examining some of the best farms in the county. They very much regret that no inducement has yet been found sufficient to bring forward the enterprising and industrious farmers of the county in this praiseworthy competition. They are of opinion that the great objects of this society could in no way be so effectually promoted as by an examination of a large number of the best farms in different parts of the county, the reports of which by the committee would furnish for our annual publication one of its most valuable sources of information. The statements of the owner or occupants of the farms, setting forth their various modes of cultivation, the variety of their crops, stock, swine, &c. &c., with an accurate and exact account of their modes of managing and cultivating, with their success, would concentrate in a small compass, a fund of information, valuable to every individual in any way engaged in agricultural pursuits. It is said to be an age of improvements. The committee do not mean to say that every new mode is an improvement, but they do believe that much has been, and

much still remains to be done, to improve this most important of all sciences. It is much more difficult to arrive at satisfactory results in agriculture than in almost any thing else. The great variety of our soil and the difference of our seasons make a larger number of experiments necessary than any individual can make to satisfy himself — from which we infer the vast importance of this source of information, where every individual may have an opportunity of of examining for himself, and of adopting such as seems to him likely to be useful. We hope the committee for 1836 will not be under the necessity of repeating the complaint which has been so many times made by the committees appointed for that purpose.

Daniel Putnam, of Danvers, entered his farm for premium. His farm is not large, and some part of his land is rough and unproductive; but there was in the opinion of the committee good evidence, both in doors and out, of enterprise, skill, diligence, neatness, temperance and economy. His statement is full, and we believe accurate. We shall not comment upon it, as it will be published with the report, and in our opinion deserves a careful examination. The committee consider him entitled to, and award him the first premium of thirty dollars.

Respectfully submitted by

DEAN ROBINSON, *Chairman.*

DANIEL PUTNAM'S STATEMENT.

To the Committee on Farms, 1835, *of the Essex Agricultural Society : —*

Gentlemen — My farm, which is entered for premium, consists of about 80 acres. Not far from 33 acres of it are suitable for tillage ; in addition to this, 12 acres are suitable for mowing. Of these last, one is gravelled meadow, one is irrigated land, and 10 are wet or peat meadow. The remainder of the farm can only be pastured ; it is so rocky that it cannot be ploughed nor mowed, and has very much run over to bushes. The greater part of my tillage land is a dark loam upon a gravelly subsoil : 8 or 10 acres, with nearly the same subsoil, have

nearly a yellow loam; in spots which are numerous and large enough to make probably 3 acres, the gravel comes quite or very near to the surface. I presume that the greater portion of my tillage land has been improved as such for more than a century and a half; but there are about 10 acres of it which was, until within the last 12 or 15 years, rough, rocky pasture land, mostly covered with bushes. Since that has been cultivated, I have pastured a portion of the farm which had long been tilled.

Planting. The present year I planted a little more than 5 acres. About one fifth of an acre was planted with early and sweet corn, early potatoes, beans, peas, turnips, &c., for use in my family during the summer and autumn. The produce of this ground was good in quantity and quality. I have not prepared myself to give you a more particular account of it. While the ground was frozen last winter, I carried stable manure on to a peat meadow, which in the summer is too loose to bear up the cattle. Early in June about one sixth of an acre of this meadow was turned up with the hoe; manure (a cord and a half) was put into the hill, and potatoes, with a few pumpkin seeds, were planted. The piece was hoed only once, and early in the autumn I obtained from it 40 bushels of good potatoes, and a cart full (40 bushels) of pumpkins.

I have 5 acres in one enclosure, the whole of which was planted this year. Along the N.E. side of this field is a row of trees, apple and locust; on the N.W. side a row mostly locust. The soil on this last named side of the field is too shallow to produce corn well, therefore I planted a strip, 4 or 5 rods wide by 20 long, with beans, potatoes, squashes, melons, and corn of a *small* kind; planted potatoes on the remaining three borders of the field also; and the remainder of the field (4 acres and 21 poles) with corn. The soil in this enclosure is mostly the yellow loam. Probably it has been tilled from near the time when my ancestors came to reside here, which was as early as 1641, and possibly earlier. Since 1827 it has been pastured.

Near the end of Nov. 1834, I spread 7 cords of manure upon about two fifths of the 4 acres and 21 rods which I was intending to plant with corn. The ground was broken up as fast as

the manure was spread upon it, thus immediately burying the manure beneath the sod. At the same season I broke up the remainder of the corn ground. The manure used here in the autumn (from my barn cellar) was a compound of meadow mud, droppings from the cows, and one load of manure obtained at a lead factory. Near the end of April, 1835, I spread 10 cords of manure, from my barn cellar, upon the furrow of the three fifths of the ground which received none in the autumn. This was ploughed in with a horse — was ploughed across the furrows, and the sod was not disturbed. The whole piece was harrowed lengthwise the furrows. The field was so furrowed that the rows one way were uniformly $3\frac{1}{3}$ feet apart, and *averaged* the same the other, but at one end of the field they were more, and at the other less than $3\frac{1}{3}$ feet apart one way. There were 15,872 hills. I put into the hill on the whole piece, about 16 cords of manure, which was mostly a mixture from the barn cellar, the hog yard, and the stable. The planting was commenced May 6th, and completed May 12th. Seven kernels of corn were put in each hill. On 75 poles, where the rows were widest apart, I planted the Phinney corn, 1864 hills. On the remainder of the piece ($3\frac{1}{2}$ acres and 26 rods) there were 14,408 hills, planted with what we call *brindled* corn. This is mostly eight rowed, has a large kernel, long ear, and large stalk.

On the greater part of this field the corn came up well, and was subsequently but little injured. But on a portion of the field (perhaps half an acre) where I put mostly stable manure that was dry and heating, there was not a good come up, and subsequently the birds, squirrels and worms did it considerable injury. At the time of hoeing I planted beans in the missing hills and those which had not more than two blades of corn. Also in July I sowed turnip seed over a portion of the field, near half an acre. In May I broke up the margins of this field, and put there 6 or 7 cords of manure, much of it coarse — all put in the hill.

Early in June I harrowed between the rows both ways, with a small horse harrow, and hoed; later in the same month,

ploughed one furrow in a row each way, harrowed each way, and hoed ; in July, (about the middle) harrowed half the piece one way, and hoed ; the other half had a few weeds pulled from it, and that is all that was done. Where the harrow is used so much it is but little work to hoe. The ground was kept almost level — the hill is *very small.*

From the margins of this field I harvested 16 bushels of apples, 140 bushels of potatoes, 15 cwt. squashes, 2 bushels beans, a few melons, and 8 bushels of early corn. From the other part I obtained 40 bushels of turnips, (these mostly from among the Phinney corn,) 4 bushels beans, 54 bushels of ears of Phinney corn, and 655 bushels of ears of the brindled corn. The corn ripened well, and was quite dry when harvested. The Phinney corn was ripe two or three weeks before the other. I gathered it October 16th, and on the 17th shelled out two bushels of the ears, which gave me one bushel and one quart of shelled corn. The yield was at the rate of a little more than 59 bushels and 23 quarts per acre. The brindled corn was gathered the last week in October, and Oct. 31st I shelled out two bushels of the ears of this kind, and obtained more than one bushel and two quarts of shelled corn. The yield (on the $3\frac{1}{2}$ acres and 26 rods) was at the rate of a very small fraction more than 95 bushels to the acre. The fodder was, I judge, equal in worth to 6 tons of hay.

In this field I growed 17 different varieties of potatoes : nine of them, making 23 bushels, were from seeds obtained by planting balls in 1833 ; some of these promise to be worth cultivating.

Part of my corn land, both last year and the present, was prepared by turning manure under the sod, and part by spreading it upon the furrows and then ploughing it in. I have been unable to perceive that either of these methods is more favorable to the growth of corn than the other.

I have half an acre of ground on which in both 1834 and 1835 I growed corn to be cut up and given to my cows while green. Last spring I spread upon this about three cords of manure, and ploughed it in ; furrowed 3 feet apart one way ; sow-

ed corn in drills. One third of the piece was sowed early in May, one third late in May, and one third June 10th. Here I cut, daily, from the first of August to the middle of September, a cart full of stalks, in all I think not less than 8 tons. As soon as the crop was all removed I sowed grass seed upon this ground which soon vegetated.

Sowing. This year I sowed with oats about 3¼ acres. In one piece there was a little more than 1¾ acres. Half of this field was broken up in October, 1833. In April, 1834, this half had 4 cords of manure put upon it, and was then ploughed with a horse across the furrows. The other half had 4 cords of manure spread upon it, and was immediately broken up, turning the manure under the sod. The whole was harrowed, furrowed 3½ feet apart each way, and it then received nine cords of manure in the hill. It yielded not far from 75 bushels of corn to the acre. In the spring of 1835 I split the hills with a horse; ploughed with a horse lengthwise the original furrows, without disturbing the sod; harrowed; sowed, oats 3½ bushels, clover 6 lbs., herd's grass 1½ peck, red top 3 pecks, per acre; harrowed the seed in and then rolled. The oats were so beaten down by rain that I was obliged to cut them before they were fully ripe; it was difficult, on this account, to thresh them clean — much was necessarily left on the straw. I obtained only 52½ bushels. Probably I should have had about 65 bushels, had they ripened well.

Another acre on which I growed oats has received peculiar treatment. Near the end of June, last year, (1834) I mowed it. It then was bound out and yielded only 13 or 14 cwt. of hay. Early in July one third of it was turned over with the plough, and on the 4th was harrowed lengthwise the furrows, was furrowed, making drills 4 feet apart. In these drills I put 1½ cords of manure, and sowed corn to be cut for fodder — the crop was good. The remaining two thirds were turned up about the middle of July, prepared like the first, dressed with two cords of manure in the drills, and sowed soon after with turnips — the crop was about 150 bushels. In the spring of 1835 I spread on the acre one cord of stable manure mixed

with 1⅓ cord of meadow mud and a cask of lime; also two thirds of a cord of peat ashes; sowed, oats 3½ bushels, clover 8 lbs., herd's grass 1½ peck, red top 3 pecks; ploughed across the furrows without moving the sod; harrowed and then rolled. This yielded more than two tons of oats, which were cut when unripe, for fodder. The stubble looks well, quite as well as the other. This experiment has thus far exceeded my expectations.

Nearly an half acre more was well manured last year, and planted with corn. Last spring I sowed this with oats and cut them while green — near a ton. This ground was ploughed up early in August; harrowed; furrowed one way three feet apart; between two and three cords of manure put in the drills; sowed with turnips and rolled. The manure was mostly meadow mud, that had been put into the barn cellar early in June, and from which the droppings from the cows at night had fallen. I once harrowed between the rows of turnips, and thinned them. The piece (73 poles) yielded 218 bushels of very fine turnips, which were harvested the first week in November.

Mowing. This season I mowed about 17 acres of tillage land, which yielded 22 tons of good hay; one acre of gravelled meadow, yielding 1½ ton; and near an acre of irrigated land, giving 1½ ton — the produce of these two acres is hardly merchantable, but is very good feed for stock — also, about ten acres of wet meadow, which gave only about 6 tons. Of second crop I had two tons.

One acre of tillage land which produced clover this year, was ploughed up early in the autumn of 1832, and immediately sowed with turnips. In the spring of 1833 it was cross ploughed, and dressed with 6 or 7 cords of manure, half of which was ploughed in, and half put in the hill. It was planted with corn and yielded about 60 bushels. In the fall of 1833, after the corn was harvested, I spread upon the acre between 3 and 4 cords of manure, from the barn cellar, and ploughed it in. In the spring of 1834 I put 3 cords of manure in the hill, and again planted with corn, and a few potatoes; the crop was about 55 bushels of corn and 20 of potatoes. This piece was cultivated

without making *any* hill — it was not ploughed between the rows, but harrowed. July 11th, the last time of harrowing, I sowed upon the acre, (then covered with corn,) clover 6 lbs., herd's grass 1 peck, red top 2 pecks. In the spring of 1835 this ground was rolled; and in July I cut upon it two tons of clover. This hay, just before being put into the barn, was rolled up into 42 heaps, apparently of equal size. Two of these, without the scatterings, were weighed, and the weight of each was 95 lbs.

One half acre of my mowing ground produced turnips in the autumn of 1833, and in 1834 was well manured and planted with potatoes. The crop was good for that year — 165 bushels. As soon as the potatoes had been harvested, Oct. 17, I ploughed, harrowed, sowed clover 3 lbs., herd's grass 6 qts., and red top 6 qts. The autumn was cold, and the hay seed did not vegetate until the spring. In the early part of the season weeds and grass came up together; so large a portion of the growth was weeds that I mowed before the grass was well grown; the produce then of weeds and grass was about half a ton; the second crop was good in quality, and amounted to 15 cwt. Adjoining this piece there is about one third of an acre which is too wet for tillage, and which in August, 1833, was ploughed, leveled, harrowed two or three times, dressed with near two cords of compost manure, sowed with hay seed, harrowed again and rolled. In 1834 this produced about 15 cwt. of good hay, and in 1835, 18 cwt.

One piece of stubble was in the spring of 1834 sowed partly with wheat and partly with oats. In some spots the oats were large, and lodged so as to render it necessary to cut them while green. The stubble where the oats ripened was inferior, by very many per cent., to that where they were cut unripe. Where the wheat was sowed the stubble was very good, better even than where the oats were cut when green. The produce of the piece was about 3½ tons of clover.

Another piece, of a little more than two acres, produced oats last year, which were cut for fodder while unripe; this also gave about 3½ tons of clover. The remainder of the mowing land

produced hay the last season. I spread annually upon my grass lands 8 or 10 cords of compost manure; this is done mostly in November.

Manure — Means. Under the eastern corner of my barn I have made a cellar, which is near 40 feet long, 14 wide, and 7 deep; five feet of the width is made a part of the cellar by a roof built out from the side of the barn a little above the sills. I conveniently get the droppings from my cows, oxen and horses into the middle of the cellar; but were the *whole* of the cellar *under* the barn these would fall at one side. The cellar has a plank floor, laid in clay, and little if any urine escapes from it. The front of the cellar is closed by three doors, each sufficiently wide to admit the cart. The eastern corner of the barn-yard is a basin of 3 or 4 rods area, the central part of which is a foot or two lower than the circumference. My hog-yard is about 28 feet long and 20 wide. This is sunk 3 or 4 feet below the surface of the surrounding ground, except on the side next the hog-house; there it so slopes that the swine can easily pass in and out. The whole is paved with small stones, and no water escapes from it. At the ends the bank is so sloped as to permit the passing in of the cart, but at the side opposite the hog-house the bank is perpendicular. From this it is very convenient putting in materials for making manure. The yard is divided into three pens, each of which connects with a pen in the hog-house. Within 60 or 80 rods from my barn I have an abundance of meadow mud.

Manner of making Manure. At night my cows are in the barn, over the cellar, during the whole year, excepting about one month, while I am getting my hay. Three swine usually are kept in the cellar. Early in June, when the cellar is empty, I put into it 3 small loads of meadow mud; the droppings from the cows at night are daily thrown down upon this, and the pigs are at work among it; in a few days I again put in meadow mud; and after ten or twelve days again put in a small load at each door. About the first of August I take all the manure from the cellar and put it upon ground which I then sow with turnips; the quantity usually about two cords. Then I put in

meadow mud as before, and continue to do this from time to time until near November. The contents of the cellar are, between the middle and last of November, all carried out upon the ground which I intend to plant the following spring, and ploughed in — quantity from 7 to 8 cords. During the winter I throw the butts of corn stalks into the barn-yard. The cows are in the yard several hours a day, and they are there at night during July. Soon after haying, the contents of the yard are all collected in the basin at the eastern corner, and are there mixed with stable manure and meadow mud; the compost heap thus formed, usually contains 8 or 10 cords, which in November I spread upon my grass lands. From my hog-yard the manure is removed only in the spring. After this has been done, I put in two or three small loads of meadow mud; this I repeat every few days; also I put in a considerable quantity of stable manure; meadow hay, weeds, &c. are often thrown in. I obtain from this yard annually about 8 cords. Usually I throw up on to the bank of the ditch, in August, a sufficient quantity of meadow mud to supply me for the year. Annually, for the last three or four years, I have purchased, three miles from my farm, about 15 cords of stable manure, some of which is used in the state in which I obtain it, but the greater part is first put into the barn-yard and hog-yard, where it is mixed with meadow mud, &c. The last two or three years I have made annually (including the 15 purchased) not far from 50 cords.

Stock. I feed a horse and cow owned by my sons. In addition to this, my stock is usually 7 cows, one yoke of oxen, a horse, and another yoke of oxen half the year, or more. A portion of my hay is carried to market.

Commonly I supply myself with stock from droves which are brought from a distance, and am unable to give any account of the breed of my animals.

I usually winter three swine, and keep in addition to these five or six pigs through the summer and autumn.

Mode of Feeding. From the latter part of May to the early part of August, my cows and oxen have nothing to feed

upon but what the pasture yields. When the feed there grows short, I give them daily, at the barn, green corn stalks. About the middle of Sept. they are turned into the fields, and need no feeding at the barn for several weeks. When the fall feed has become short, I give them turnips, generally with the tops on. By the use of these, and a few corn stalks, they are kept along until the latter part of November. During the three winter months, they are fed mostly upon meadow hay, straw, turnips and corn stalks. The meadow hay is salted when put into the barn, and before being given to the stock both that and the straw are chopped with the straw-cutter. In the spring they are fed upon good upland hay, which is not cut. For a few weeks about the time of calving I give each cow one or two qts. of cob-meal per day. In the warm season the horses run in the pastures and fields, and in the winter are fed upon cut hay and cob-meal. In former years I gave my swine the wash from the kitchen and dairy, meal, and, in the autumn, unripe corn upon the cob. This season I have boiled apples and cob-meal together, and the swine thrive and fatten well upon this mixture. Since the first of Sept. I have used in this way about one bushel of small apples daily. For my store pigs, I thicken the wash from the *kitchen* with boiled apples and a very small quantity of cob-meal. Those which I am fattening have the wash from the *dairy*, thickened with apples and more meal; they eat also some small unripe corn. I think I do not use more than half the meal this season that I have used in former years to obtain the same quantity of pork.

Quantity of Labor, from Dec. 1, 1834, *to Dec.* 1, 1835. Myself the whole year; one son, 14 years old, has lived at home the whole year, but attended school 4 months; another son, 10 years old, with me the whole year, but attended school 5 months; an older son, whom I hire, 8 months. Paid for labor done by others 30 dollars. Received for labor done by myself and the three sons above named, in the shoe manufactory of two other sons, 56 dollars and $\frac{66}{100}$. Received for labor done with the team off the farm, 29 dollars and $\frac{25}{100}$.

Excepting one man 23 days, all the labor on the farm has

been performed by myself and sons, and all in the house by my wife and daughters. There has been no use on the farm of ardent spirit, wine, cider, beer, or tobacco. My family for the year has averaged from 9 to 10 persons. Milk is a common drink with us in the field and at the table. Probably we consume more than a gallon per day, through the year.

Orchard. Near forty years ago planted a nursery, from which subsequently I transplanted many trees upon my rocky, bushy pasture land. That orchard did well for a few years, but the trees there are nearly all dead. At this time I have, including all ages from very old to quite young, about 240 *bearing* engrafted apple trees, and 25 natural. Of the engrafted I have about 20 different varieties — more of the russet pearmain than of any other kind. I have about 80 engrafted apple trees, which are yet too young to bear. I transplant my trees in the spring. Of the pear I have 12 trees and 7 varieties. Have peach, cherry, plumb and quince trees, mostly young, making in all between 40 and 50. Have also 5 or 6 grape vines which have recently commenced bearing. Nearly all my fruit trees now are upon my tillage land, and upon portions which this year yielded grass.

Products of the Farm, 1835.

English Hay	25	tons.
Wet Meadow	6	"
Oats cut for fodder	3	"
Oat Straw	2	"
Second crop	2	"
Dry corn fodder, equal in worth to	6	" of hay.
Corn fodder used green	8	"
Turnips	265	bushels.
Potatoes	185	"
Oats	52½	"
Indian Corn	725	bushels of ears.
Beans, white,	6	bushels.

Winter Apples, engrafted, - -	200	barrels.
Winter " " (inferior)	100	bushels.
Summer " " (good)	100	"
Apples, natural, - -	140	"
Summer Pears - - -	10	"
Autumn and Winter do. - -	7	"
Quinces - - - -	1	"
Peaches - - - -	5	"
Grapes, Isabella, - - -	2	"
Winter Squashes - -	1500	lbs.
Pumpkins - - - -	1	cart full.
Seven Calves, fatted, - -	945	lbs.
Young Pigs, sold alive, - -	50	"
Milk, sold, - - -	170	gallons.
Butter - - - -	824	lbs.
Pork - - (probably)	1550	"
Beef, fatted, - - - -	2500	"
Milk, used in my family, -	365	gallons.
Vegetables, do.		

DANIEL PUTNAM.

No. II. ON THE DAIRY.

The Committee on the Dairy consisting of Ebenezer Moseley, Eliphalet Emery, John Preston, William Johnson Jr., Benjamin G. Metcalf, and Joseph Kittredge, submit the following *Report* —

The only parcel of cheese offered for premium was exhibited by Samuel Bailey, of West Newbury. There were five cheeses produced, weighing about 23 lbs. each. The committee are of opinion that this cheese was of a good quality, but not of a quality to be entitled to the first premium. They therefore recommend to Mr. Bailey the second premium of eight dollars.

There were six parcels of butter entered for premium, by the following persons — Samuel Bradstreet, of Topsfield, Chs.

C. Sewall, of Danvers, Daniel P. King, of Danvers, Samuel Bailey, of West Newbury, Ezra Batchelder, of Danvers, and R. A. Merriam, of Topsfield.

It is an express rule of the society, that every application for premium on butter must be accompanied by a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter. No such account was given by any of the applicants for premium, except by Mr. King, whose account was full and satisfactory. The committee could not therefore have given any other premium, even had the butter been of a superior quality. The butter offered by Mr. King was the produce of eight cows, and was of a good quality, and for which the committee award the second premium of six dollars.

Respectfully submitted.

Sept. 30, 1835. E. MOSELEY, *per order.*

DANIEL P. KING'S STATEMENT.

To the Committee of the Essex Agricultural Society, on the Dairy :

GENTLEMEN — The stone jar maked X, contains thirty pounds of butter made in June : the cows had common pasture feed only ; the milk stood in earthen pans in a cool cellar thirty six hours ; the cream was then separated and placed in earthen pots on the cellar floor — if there is danger that the cream will sour, a handful of fine salt is stirred into it. Gault's churn is used and much approved. After the butter comes, it is taken from the churn, the buttermilk pressed out, it is then salted and put into the cellar, where it remains one day ; it is then worked over, the buttermilk wholly pressed out, and more salt is added — the whole quantity of salt used is about one ounce to the pound of butter, and this is considered a more palatable and perfect preservative than any composition I have tested.

Respectfully submitted by

DANIEL P. KING.

Danvers, Sept. 30th, 1835.

No. III. ON MILCH COWS.

The Committee on Milch Cows and Heifers, consisting of Edward Tappan, Jr., of Newbury, George Osgood and Ezra Batchelder, of Danvers, Thomas G. Foster, of Andover, and Horace Ware, of Salem, *Report* —

That there were exhibited for premium and exhibition —

One cow owned by Rev. Charles C. Sewall, of Danvers, with a sample of her butter, and a particular statement of her milk the past season.

One cow owned by Col. Amos Shelden, of Beverly, six years old.

One cow owned by Ezra Batchelder, of Danvers, with a sample of her butter.

Two cows owned by Ebenezer King, of Danvers.

One cow owned by Eben Upton, of Danvers.

Two cows, of the Durham short horn breed, owned by E. Hersey Derby, Esq., of Salem.

There were no heifers presented, of the description for which premiums are offered.

The committee award the premiums as follows : —

To Charles C. Sewall,	1st premium,	$10	00.
Ezra Batchelder,	2d do.		7.
Ebenezer King,	3d do.		5.

The committee would have been pleased to have had an opportunity to examine more of the fine cows in the county, that might have been exhibited ; and to have seen the statements of their produce. The animals that were exhibited were good, but if there had been many more, the exhibition would have been much better. Let there be brought forward *each year*, one cow from *each town* in the county, and this the best that can be found therein ; and then this exhibition of cows alone would well pay our farmers for coming to examine it. The difference between *good* cows and *poor* ones is all important in the management of a dairy, that most essential item in a farmer's calculations.

For the committee,

Sept. 30th, 1835. EDWARD TAPPAN, Jr.

CHARLES C. SEWALL'S STATEMENT.

To the Committee of the Essex Agricultural Society :

GENTLEMEN — The milch cow offered by me for exhibition this day, was raised in Ipswich and is about seven years old. She has been kept, during the greater part of the season, on common pasture feed together with the ordinary wash of the house. To this I have added, since the 10th of August, one or two quarts of meal, daily. She calved on the 15th June, and her calf was removed on the 9th of July.

I have kept an exact record of the quantity of milk taken from her at each milking since the 26th of June, a period of 95 days, and I find the whole quantity to be 3189 lbs., or 1236 quarts, allowing 2 lbs. 9¼ oz. to the quart. The actual weight of a quart was a little less than this — say 2lbs. 8 oz.

The greatest quantity of milk taken in one week was 116 quarts : in one day, 17 quarts and 1 pint. The average quantity daily was 13 quarts.

The greatest quantity of butter made in one week was 8½ lbs., after reserving about 38 quarts of milk.

The cow is of the common native breed, of large frame and of remarkably peaceable and gentle temper. Her milk is uncommonly sweet and rich.

Respectfully,

CHARLES C. SEWALL.

Danvers, Sept. 29th, 1835.

EBENEZER KING'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Milch Cows :

GENTLEMEN — The undersigned makes the following statement respecting his deep red cow which he this day offers for premium. She is of native breed, is five years old, and was bought in the fall of 1832 out of a drove from New Hampshire. She brought her first calf, a very large one, in January, 1833, and continued to give a good quantity of milk till the last of November, 1834 ; in December following she brought her second calf, which was killed when four weeks and six days old,

and weighed 23¼ lbs. to the quarter, and brought in Salem market $9 40. Besides suckling her calf she yielded 551¼ lbs. of milk more than he would take. Her feed was hay and 3 qts. of cob-meal; for the first fortnight after her calf was killed she gave 36¾ lbs of milk per day in very cold weather. For some time, on grass feed, she gave 35 lbs. of milk per day; for the last seven days she has given 26¼ lb. per day. She will calve again in March.

The brown cow is offered for exhibition only. She is of native breed, is six years old, and calved in April; she has given a large quantity of milk. The milk of both the cows is very good, and makes excellent butter.

Respectfully submitted,

EBENEZER KING.

Danvers, Sept. 30th, 1835.

EZRA BATCHELDER'S STATEMENT.

To the Committee of the Essex Agricultural Society, on Milch Cows and Heifers:

GENTLEMEN — This cow I present for your inspection is now five years old, and has had three calves; the last I took from her June 5th. Eight weeks following I milked from her per day thirty six and a half pounds, and made ten and a half pounds of butter per week. Since that she has averaged nine pounds per week, and butter of the first quality; her keeping common pasturing, and driven three quarters of a mile.

EZRA BATCHELDER.

Danvers, Sept. 30, 1835.

No. IV. ON DOMESTIC MANUFACTURES.

The committee on Domestic Manufactures, consisting of N. W. Hazen, Andover, Dean Robinson, West Newbury, Hector Coffin, Newburyport, Robert S. Daniels, Danvers, and Daniel

Noyes, Newbury, having examined all the articles entered for exhibition and compared those offered for premiums, make their *Report*, recommending that premiums be awarded and gratuities given as follows: —

To Mrs. E. A. Little, Newbury, for the best piece of carpeting, a yard wide, and more than 20 yds. 1st prem. $ 5
To Mrs. Mary Pettingill, Newbury, 2d prem. for do. 3
To Miss Hannah C. Hardy, East Bradford, for the best straw bonnet, the 1st prem. - - 5
To Miss Frances C. Crosby, Newburyport, 2d prem. for do. 3
To Miss Mary Ropes, Danvers, for the best wrought hearth rug, the 1st prem. - - - 3
To Mrs. Serena Ayer, Danvers, 2d prem. for do. 2

The claimants for the premiums on these articles were very numerous, and the committee had some difficulty in selecting the specimens to be distinguished as entitled to the rewards offered by the Society. They would therefore particularly commend to the notice of the Society those offered by Mrs. McLellan, of Beverly, Mrs. Abigail Chase, Newbury, Mrs. Sarah Ann Tappan, Newbury, Mrs. A. Osborn, Danvers, Miss H. F. Abbot, Andover, Miss Sarah Smothers, Salem, Mrs. Hitchings, Beverly, Mrs. Edward Tappan, Newbury, and Mrs. Woodbury, of Beverly.

To Abigail C. King, Danvers, for the best wrought woollen hose, 2d prem of - - - $ 1
To Samuel Fisher, Andover, for a very fine specimen of wove worsted hose, a gratuity of - - 4
To Mrs. A. A. Abbot, Andover, for the best silk hose, the 1st prem. of - - - - 5
To Miss Martha Conant, of Beverly, for 1 pair silk stockings and a specimen of sewing silk, a gratuity of 1
To Miss Sarah Ingalls, Andover, for specimens of silk and cocoons, a gratuity of - - - 1
To Mr. George F. Sanger, Danvers, for a quantity of cocoons, a gratuity of - - - 1
To Mr. Moses Dole, Danvers, for a quantity of cocoons, a gratuity of - - - - - 1

To Mrs. Phebe U. Cross, Danvers, for the best wrought counterpane, the 1st premium of - - $ 4
To Miss Lucy Southwick, Danvers, 2d prem. for do. 2
For the best specimens of work by children under 12 years of age :
To Susan H. Kimball, of Bradford, aged 9 years, for working a sampler, the first premium, - - 3
To Elizabeth Little, Newbury, aged 7 years, wrought counterpane, second premium of - - 2
To Mercy F. Crosby, Danvers, aged 11 years, for two pair of wrought shoes, a gratuity of - - 1
To Mrs. Abigail Hooper, Danvers, for a net cap, bag and collar, a gratuity of 1
To Miss E. B. Osborne, Danvers, for workbag, needle book, and chain, a gratuity of - - 1
To Miss H. A. Emerson, Danvers, for a workbag, a gratuity of - - - - - 1
To Miss M. H. Abbott, Andover, for a wrought shawl, a gratuity of - - - - - 2
To Miss Alice Foster, Beverly, for a bead bag, a gratuity of - - - - - - 1
To Miss E. C. Jacobs, Danvers, for do. a gratuity of 1
To Miss Sarah Felton, Danvers, for a lamp stand, a gratuity of - - - - - 1
To Miss Louisa S. Carey, Danvers, for a cricket cover, a gratuity of - - - - - 1
To Mrs. Lefavor, Beverly, for two pair woollen gloves, a gratuity of - - - - - 1
To Mr. Stephen Driver, Salem, for a specimen of boots and shoes, a gratuity of - - - 2
To the Female Benevolent Society, Danvers, for a variety of very beautiful and ingenious articles, made by the society, and to be sold in the promotion of its objects, a gratuity of - - - - 2
To the association of Ladies, Danvers, for a similar exhibition, a gratuity of - - - - 2
To Miss Rebecca E. Page, Danvers, for the best specimen of wrought lace, the second premium of - 2

To Miss E. A. Foster, Salem, for a specimen of transferring on Muslin, a gratuity of - - - 1
To Miss R. Miller, for an India Muslin Cape, very elegantly wrought, a gratuity of - - 2
To Miss S. E. Follansbee, for a Swiss Muslin Cape, do. 3
To Miss M. Morgridge, several articles of muslin, wrought, do. - - - - 1
To Mrs. Harris, Newbury, aged 74 years, for a net cap, do. 1
To Mrs. Andrew Munroe, Danvers, for 12 pr. woollen mittens, do. 2
To E. B. Kenney, Salem, for some very fine sheepskin mats, do. 2
To Messrs Pool & Jacobs, Danvers, for some very superior white sheepskin linings - - 4

The committee were much gratified by the exhibition of a lot of imitation combs from the manufactory late of Mr. Charles H. Coffin, now the property of Nathan Crosby, Esq., Newburyport, of the extent and success of which some opinion may be formed from the facts that it produces 387 dozen daily, and gives employment to 80 hands. A gratuity of two dollars is recommended.

The committee are informed that the number of articles offered at this exhibition has been equal to that of any previous year. There is no reason therefore to apprehend that it is losing any of its interest with the public. Still it is believed that there are some circumstances which prevent its interest and consequently its usefulness from being more extended. Several of its largest premiums had no claimants. We might instance that proposed for Flannels, in the production of which the county is highly distinguished. It is desirable that the influence of the Society should be felt by every interest, and that every interest on which it is designed to operate directly should be represented at its anniversaries.

It is objected that the goods presented are sometimes injured in the exhibition. Some remedy against this should certainly be provided. Perhaps this may be done by providing moveable counters or cases for the reception of articles, and the best plan

for their construction may be the proper subject for the offer of a premium at the next exhibition.

The want of time to arrange and examine the articles offered in as perfect and full a manner as could be wished, is so obvious that it need hardly be alluded to, except for the purpose of suggesting to any who may at any time think that entire justice has not been done to their claims, that in Worcester it is required that all claims shall be entered the day before the anniversary; but what we learn of the operation of the rule in that county does not induce us, upon the whole, to recommend its adoption here.

More attention might be drawn by enlarging the number of premiums. They could be made to embrace specifically the various kinds of woollen manufactures, as well as hats, boots, shoes, combs, &c. It is desirable to bring together in this manner some of the choicest specimens among the products of the useful arts, in order to fix the quality to be expected in each at the highest standard that can be attained. From such a collection useful hints might be derived which many experiments and great expense would fail to suggest. It might happen that one would in some year impart more than he would receive, but it is to be recollected that the succeeding year might more than turn the balance of the account in his favor. Every man is the purchaser of all articles of necessity which he does not himself manufacture, and it would be no small benefit to him to learn the best mode of making the articles which he commonly uses and must always buy. No man has a right to expect this advantage for himself unless he is willing to contribute his share to making it universal.

The present prosperity of manufactures is such that they need no stimulus beyond that afforded by the success that attends their business. But this very prosperity imposes upon the farmer the duty of enabling agriculture, by his industry and enterprise, to maintain her equality. The labors of the loom and the spinning wheel, which within a few years gave employment to his household, are now performed by water power and the most complicated machinery in "the palaces of the poor." If

in consequence of this change, the farmer is at once to lose all benefit of this labor, and pay money in the purchase of the very articles which it formerly produced, it is obvious that it must tend to impoverish him. The increase of manufactories has already greatly improved his market. If to this he will add the application of the surplus industry of his household to some profitable pursuit, the interest which he represents will have nothing to fear from the rivalry of any others.

The cultivation of silk, encouraged as it is by the best practical farmers, and by the legislature, it would seem must be such a pursuit. Those who have not attended to this subject may apprehend that there are many difficulties in the operations. But they will find on examination that those of carding, spinning and weaving, as formerly conducted, required at least as much skill and perhaps more experience and instruction. It may be added that the labor is far lighter. That silk may be profitably produced in this Commonwealth seems to be placed beyond doubt. Those who are earliest to engage in it will be the first to reap its benefits. And it adds much force to its recommendation that it seems suited to supply the place of other objects, the labors on which have been superseded.

N. W. HAZEN, for the Committee.

No. V. ON CIDER.

The Committee on Cider, consisting of Hector Coffin, John Adams, Thomas Perley, Jesse Putnam and William Thurlow, beg leave to *Report* —

That they have, most of them, assembled after many weary miles of travel, without finding a single glass of cider awaiting them to quench their parching thirst, or exhilarate their drooping spirits. Filled with the milk of human kindness themselves, toward every member of the laborious, meritorious, and honorable society of agriculturists, without whose efforts the general population of the world would neither be able to eat good bread nor drink good cider, they accordingly exceedingly regret *this* society's privation of *this* luxury on *this* memorable day.

The premiums offered by this society are liberal, and your committee know no sufficient cause, when there is plenty of good cider made in this county, why it has not been brought forward.

It would seem to your committee, that as the apple was the forbidden fruit in the garden of Eden, that a curse had followed the expression of half of its juice ever since, by turning it into vinegar; yet even that article well pays for its expression.

In all the Shaker villages in our country, where the members publicly profess, neither "to marry nor be given in marriage," and therefore, under such perverse disobedience to one of the first and most important divine commands, to "increase, multiply and replenish the earth," deserve none of its bounties, yet they have this luxury of "good cider" in great perfection. Let it be distinctly understood, however, that your committee, as much as they are lovers of "good cider," do not ask, or even wish for it, under the pains, penalties, and privations, consequent on such direful disobedience. They would only endeavor to impress deeply on the minds of their brother farmers, who do obey this sacred and heavenly command, and who have, of course, all the smiles and blessings of heaven following obedience to its decrees, that if they exercise the virtues of discrimination, cleanliness, patience, and vigilance, used by these nests of disobedient celibates in making their cider, they would have liquor equal to the nectar of the heathen mythology, and as tempting to the taste as the original fruit was to our first parents in the garden of Eden, when presented by the odious serpent.

HECTOR COFFIN, *Chairman.*

No. VI. ON PLOUGHING—DOUBLE TEAMS.

The Committee on Ploughing with Double Teams, consisting of Jonathan Ingalls, of Andover, Nathaniel Felton, Jr., of Danvers, Joseph Goodridge, of Newbury, Jedediah H. Barker,

of Andover, and Richard Stewart, of Haverhill, *Report*—

That there were eight teams entered for this purpose. But four appeared on the field, viz :

William Foster, 3d, of Andover.
Joseph Putnam, Jr., of Danvers.
James Brown, of Salem.
Perley Tapley, of Danvers.

The field was laid out in lots 16 rods in length, 2 rods in width, and assigned as follows :

No. 1. George W. Winslow, ploughman, Wm. Foster, 3d, driver. Work done by 24 furrows, in 37 minutes.

No. 2. Matthew Putnam, ploughman, Joseph Putnam, driver. Work done by 29 furrows, in 39 minutes.

No. 3. James Brown, ploughman, William Brown, driver. Work done by 24 furrows, in 33 minutes.

No. 4. Perley Tapley, ploughman, James Hutchinson, driver. Work done by 28 furrows, in 43 minutes.

All the work was well and neatly done, and so nearly equal in point of merit that your committee found it difficult to distinguish between the claimants.

They have agreed to recommend that the premiums be awarded as follows :

To Joseph Putnam, Jr.	1st	premium,	$12 00.
James Brown,	2d	"	10 00.
Perley Tapley,	3d	"	8 00.
William Foster, 3d,	4th	"	6 00.

Respectfully submitted.

For the Committee,

Sept. 30, 1835. JONA. INGALLS.

No. VII. ON PLOUGHING—SINGLE TEAMS.

The Committee on Ploughing with Single Teams, beg leave to offer the following *Report*—

It may be thought useless to speak to farmers of the importance of the plough in agriculture. The plough, or something

analogous, has been used in all ages, both by civilized and uncivilized nations, and considered an indispensable utensil in the cultivation of the soil. Rude and awkward instruments were formerly used ; oxen's horns were used by some barbarians.

Great improvements have been made in the plough ; so great that with the best improved, one half the strength and labor only are required now, that were formerly required, for turning up the sward. The very circumstance of this society offering a premium, thereby encouraging the practice of ploughing, with one yoke of oxen, sward land, is itself evidence of the great advance in this operation. Who, even twenty years ago, would have harbored the idea of *breaking up* with a team of one yoke of oxen ?

In such a universal and necessary operation, fifty per cent. is certainly an immense saving to the agricultural community ; but who will undertake to say, so far as regards animal strength, that in the progress of improvement, fifty per cent. more may not be saved, and the process of ploughing be performed by steam !

Three entries were made for ploughing with single teams, viz: —

Daniel Putnam,
Moses Pettingill,
Asa Tapley,

in lots numbered in the order in which they are named. The work was all well done, especially that of Pettingill and Tapley. The committee found much difficulty in deciding which was entitled to the first premium, but finally were unanimous in awarding them as follows :

Asa Tapley, of Danvers, lot No. 3, 48 minutes, 28 furrows, Wyatt P. Woodman, ploughman and driver, the society's first premium, $ 10

Moses Pettingill, of Topsfield, lot No. 2, 52 minutes, 30 furrows, Nathan Hurd, ploughman and driver, second premium, 8

Daniel Putnam, of Danvers, lot No. 1, 52 minutes, 30 furrows, William Putnam, ploughman and driver, third Premium, $ 6

Quantity of land ploughed, sixteen rods in length, by two rods in width.

R. A. MERRIAM,
R. HEATH,
ASA. T. NEWHALL,
EBENEZER KING,
ERASTUS WARE,
} *Committee.*

Sept. 30, 1835.

No. VIII. ON WHEAT AND RYE.

The committee to whom were referred the statements of Mr. John Noyes, of Newbury, and Mr. Greenleaf Plummer, of West Newbury, *Report* —

That they have considered the same, and regret that they cannot regard that of Mr. Noyes as a compliance with the terms on which a premium was offered for the best *experiment* in the cultivation of Wheat. They feel themselves restricted by the rule of the society from proposing a gratuity.

One of the committee has attempted the cultivation of the German Barley, mentioned by Mr. Plummer. His experience does not warrant him in recommending to others the trial of it. He has himself wholly abandoned it.

It is due to Messrs Noyes and Plummer, to acknowledge the gratification which these proofs of their interest in the Agriculture of the county, have afforded. Although precluded by rules from the premiums of the society, the committee are assured that an enterprise which seeks to add another to the productions of the farmer, though in some instances it may not be successful, and produces such abundant crops, can never be without its great and multiplied rewards.

N. W. HAZEN, for the committee.

Topsfield, Jan. 1836.

GREENLEAF PLUMER'S STATEMENT.

The following is a correct statement of facts relative to specimens of Barley, from German seed, raised by the undersigned, superintendant of the Spring Hill Farm, owned by William H. Moody, situated in West Newbury, the present year, 1835, viz:

Said specimen was raised, as above, from a bushel of seed, sown on 150½ rods of land (measured by John Coker, as his certificate accompanying this statement, says.) I further say that the Barley was not threshed clean, and that (in my humble opinion) had the straw been thoroughly cleaned, it would doubtless have made the whole quantity produced 31 bushels.

The above statement is respectfully presented for the consideration of the Agricultural Society of the County of Essex, by their humble servant,

GREENLEAF PLUMER.

In presence of
J. BRICKETT, *Justice Peace.*

Newbury, September 29th, 1835.

NOTE — The above land was grass ground in the spring of 1833. Ploughed and planted with potatoes, manured in the holes only; ploughed and planted with Indian corn; manured as before — in 1834; and the present year prepared only, by ploughing, harrowing and sowing in the ordinary manner, without manure. GREENLEAF PLUMER.

JOHN NOYES'S STATEMENT.

To the Trustees of the Essex Agricultural Society:

GENTLEMEN — The following is a statement of a crop of Wheat which I have raised the past season, which I submit to you: —

In the spring of 1834, there were about five cords of manure drawn on to the land, and a part of the same planted with corn, and the remainder with potatoes. On the part planted

with potatoes, the manure was spread and ploughed in — on the corn part, it was put in the hole. There was a fair crop of each, the exact amount of which I do not recollect ; but there was in the following wheat crop a difference in favor of the part planted with corn. In the spring it was ploughed and sowed with three bushels of white wheat, and reaped and threshed in August, and the amount was thirty three bushels.

Respectfully, yours,

JOHN NOYES.

Newbury, Dec. 9, 1835.

THIS MAY CERTIFY, That I have surveyed the above land sowed with wheat, and there was one acre and one quarter and four rods. TRISTRAM LITTLE, *Surveyor.*

THIS WILL CERTIFY, That I assisted in threshing and measuring the within crop of wheat, and the above statement is correct. CHARLES NOYES.

Essex ss. Dec. 12, 1835. Then the aforenamed John Noyes, and Charles Noyes, personally appeared, and made oath to the truth of the foregoing statements, by them subscribed, before me,

SILAS MOODY, *Justice Peace.*

ASA A. ABBOT'S STATEMENT.

My specimen of reeled silk weighs one pound and two onnces, and is the produce of about 4500 worms, fed entirely on white mulberry leaves.

My worms were hatched by placing the eggs in a warm room about the 28th of May. In eleven days the worms were hatched, and, for the convenience of feeding, were kept in the same room until the third moulting, when they were removed to a granary and placed on shelves fitted for their reception. In five

weeks from the time of hatching, they began to ascend, and in six weeks they were all on the hedge, and in about eight days the hedge was taken down, the cocoons picked off, separated from the floss, and reeled immediately.

My method of feeding was to give them a fresh supply of leaves early in the morning, and late in the afternoon, until the third moulting; after the third moulting, they were fed three times a day.

The leaves for feeding, were gathered when free from wet, if the weather was fair, but when necessary to gather them in damp weather, they were dried before giving them to the worms. During the last age of the worms the quantity of leaves consumed by about 4500 worms was from 18 to 20 pounds of green leaves per day.

For reeling, a sufficient number of cocoons to form a thread of suitable size were put into a dish of hot water, and reeled on a common clock reel. The operation of reeling required two persons, one to turn the reel and one to tend the cocoons.

Yours, respectfully,

A. A. ABBOT.

At a meeting the Trustees, Messrs Hazen, Duncan, and Kittredge were appointed a Committee to examine Mr. Abbot's statement, and they recommended that the premium of *seven dollars*, offered on this subject, be awarded to Mr. Abbot.

Attest. J. W. Proctor, Sec'y.

No. IX. ON BULLS.

The Committtee appointed on the examination of Bulls, having attended to the duty assigned them, ask leave to *Report* —

That they find seven bulls regularly entered for premium, and after close examination and discrimination to the best of their judgment, they have awarded

To Amos King, of Danvers, for his red bull, 19 months and 22 days old, half blood short horn, first prem. of $10

To James Abbot, of Andover, for his red bull, 2 years old, native breed, second premium of - - $5

Amos Shelden, of Beverly, presented a large bull, 3 years and nine months old, weighing 1620 lbs.; has had, the season past, 120 cows; is of the short horn breed — but the Committee being in favor of encouraging the native breed, gave the premium to the two abovementioned.

Per order of the Committee.

WILLIAM JOHNSON, Jr.

Sept. 30, 1835.

No. X. ON OXEN AND STEERS.

The Committee on Steers, having attended to that duty, *Report* —

Three pairs of three years old, and five pairs of two years old steers were offered for premiums.

Your committee were unanimous in their opinion that Ralph H. Chandler, of Andover, is entitled to the society's first premium, of seven dollars, for his three years old steers; and Perley Tapley, of Danvers, the second premium, of five dollars, for his red steers.

Your committee are also of opinion that Amos Shelden, of Beverly, is entitled to the first premium, of six dollars, for his two years old steers; and Jedediah H. Barker, of Andover, the second premium, of four dollars.

Your committee were much pleased with a pair of steers, of the Durham short horned breed, offered by E. H. Derby, of Salem.

The committee were much pleased with a fine yoke of working oxen, exhibited by Moses Wilde, of Topsfield. As no premium was offered by the society, your committee are of opinion that they are worthy of a gratuity of three dollars.

All which is respectfully submitted.

SAMUEL BRADSTREET, *Chairman.*

No. XI. ON SWINE.

The Committee of the Essex Agricultural Society on Swine, beg leave to *Report* —

That they have attended to the duty assigned them, and have awarded the premiums as follows:

There were presented for premium three breeding sows, two owned by Asa Tapley, of Danvers, the other by Perley Tapley, of do.; and one boar by Asa Tapley, of do.

Three litters of weaned pigs, two by Asa Tapley, and one by Perley Tapley, of Danvers.

The first premium, of five dollars, for the best boar, they have awarded to Asa Tapley, of Danvers.

The first premium for breeding sows, of five dollars, they have awarded to Asa Tapley.

For the second best, to Perley Tapley, of Danvers, three dollars.

For the best litter of weaned pigs, four in number, the first premium of six dollars, to Asa Tapley.

The second premium, of three dollars, for the second best litter, four in number, to Perley Tapley, of Danvers.

JESSE PUTNAM,
WM. W. LITTLE, } *Committee.*
EDWARD HOOD,

No. XII. ON HORSES.

The Committee appointed to examine the Horses presented for premium, have attended to the duties assigned them, and ask leave to *Report* —

The exhibition of the animals has been highly satisfactory. Your Committee are aware that it is attended with some expense to raise a good horse and fit him for use, but still, however great the expense may be, the value of this noble animal when at the age of four or five years, will pay the expense as

well as any other stock, comparing the prices they now sell for, with those of former years. We hope our worthy farmers in this county will continue to use their exertions in bringing them to greater perfection than we have yet seen, and hope it may stimulate some of them to try their skill, for that noble animal, the horse, is regarded of great importance to the community, and more particularly in this county, where so many are employed in various kinds of business.

The number presented to-day for examination was nine.

Your Committee were of opinion that the first premium, of $10 should be awarded to Mr. Hazen Ayer, of Danvers, for his light sorrel horse, 5 years old.

The second premium, of $8, to Ezra Batchelder, of Danvers, for his dark brown horse, 4 years old.

The third premium, of $6, to Edmund Johnson, of Andover, for his black mare, 4 years old.

The fourth premium, of $4, to Erastus Ware, of Marblehead, for his dark grey horse, 3 years old.

ANDREWS BREED,
JONA. DUSTIN,
AMOS SHELDEN,
JERE'H COLMAN,
M. BRIDGES,
} *Committee.*

Sept. 30, 1835.

No. XII. ON FRUITS AND FLOWERS.

The Committee on Fruits and Flowers, believing it to be the principal object of the society in the appointment of such a committee, to obtain for publication a Report which might convey valuable information to the farmers in the county, have to regret that the show at Danvers, although as good as could have been expected, considering the novelty and lateness of the call

for the exhibition of fruits and flowers, and it not being generally known that any premiums or gratuities would be given for such objects, has not furnished them with all the information necessary for a satisfactory execution of the task assigned them. Yet much interesting knowledge of the fruits and flowers cultivated in the county was obtained, and the committee, while they express their thanks to those gentlemen and ladies who exhibited the delicious and beautiful productions of their orchards and gardens, regret that they have not far greater obligations to acknowledge, which would have been the case, had the specimens been accompanied by written statements of the peculiar qualities and value of each. The public must be aware that samples of all the best fruits cultivated in the county, should they be exhibited on the last day of September, when many of them are immature, could afford a committee no adequate knowledge of the qualities and value of a large part of the collection. It is therefore of the first importance that the exhibitions of varieties of fruit not generally known should be accompanied by statements of the quality of the tree as a bearer, its thriftiness as to growth, the peculiar qualities of the fruit, the time of the year it comes to perfection, and the length of time it may be kept.

There were exhibited upwards of forty varieties of the apple, several of them new, from seedling trees, without names, and although doubtless highly valued by their owners, the committee were not made sufficiently acquainted with their peculiar claims to notice, to recommend the cultivation of them to others. Twenty varieties of pears, quinces, &c. A variety of grapes, native and foreign. Fine specimens of the vegetable marrow squash, exhibited by Benj. Goodridge and others. This excellent squash ought to be generally known and cultivated by farmers. Great care must be taken to prevent it from mixing with other squashes and pumpkins, especially with the blue *African* squash, with which it is much disposed to *amalgamate*, and lose, in great increase of size, its peculiarly valuable qualities. Some very large crook-neck squashes, pumpkins, the real red citron melon, for preserving, exhibited by S. Driver, and a variety of other vegetables by Edward Lander and others.

Fifty varieties of that most splendid autumnal flower, the Dahlia, exhibited by Francis Putnam, Salem, and a great variety of beautiful flowers in bouquets and otherwise, presented by S. Driver, H. Wheatland, A. Sanger, J. M. and B. H. Ives, J. C. Lee, and others, made a very interesting show of flowers for the season.

Instead of confining themselves to the varieties exhibited, your committee conceive that they shall best serve the interests of the society by giving a catalogue, interspersed with occasional remarks, of such fruits as at present informed, they deem best worth the attention of the farmers of the county of Essex.

Apples — Early Summer Varieties.

[The names of gentlemen appended, indicate the places where scions may be obtained.]

Early Harvest Apple — Acid sweet, ripens in July and August. This is not a great bearer, but the fruit is large, fair and pleasant, both to the eye and taste. It is the earliest apple known. Andrew Nichols, and most of the orchards about Salem.

The Putnam Harvey — About a fortnight later than the last, not quite so tart, a better bearer. Col. Jesse Putnam, and at most farms in Danvers.

Sweet Harvey — An old and well known apple.

Topsfield Sweeting — A large golden apple, very sweet, rather dry when ripe, and not a great bearer — ripens in August. Andrew Nichols, Abel Nichols, North Danvers.

Early Bough — Sweet, large and handsome, a good bearer, ripens in August. Manning's nursery, North Salem.

Summer Pearmain — Striped red and yellow, very fine. August. Manning's nursery.

Benoni — One of the best summer apples. Ripens in August and September. Manning's.

Hawthorndean — Yellow, with bright red, a great bearer. September. Manning's.

Williams' Favorite — Dark red, good and handsome. August. Manning's.

Yellow Jenneting — A small yellow apple, excellent for cooking. July and Aug. S. P. Fowler.

Fall Apples.

The Fall Harvey — A large and excellent apple. September.

The Proctor Harvey — Large and excellent, a good bearer. Capt. Johnson Proctor, Danvers.

Porter Apple — Long shape, yellow, superior. September. Manning's.

Boxford Apple — A large, fair, striped red apple, much esteemed. From October to January. A very great and sure bearer. Nichols's, South or North Danvers.

Danvers Juicy-pulp — A fall greening. This is the most juicy apple known; pleasant, but not rich; fair, of a medium size, and the greatest bearer, every other year. Seedling tree on the Nichols farm, North Danvers.

Blood Apple — Small, smooth, bright red, the color staining considerably, the pulp of the apple juicy and good. Ripens in September. S. P. Fowler.

Hutchinson Sweeting — A large red striped apple, very sweet and juicy, excellent for baking, bears well every other year. It was introduced into the New Mills, Danvers, where it has been much valued and cultivated, by Col. Hutchinson, of the revolutionary army. It may have another name elsewhere. S. P. Fowler.

Kerry Pippin — A fine fall apple. Sept. and Oct. Manning's.

Lyscom — Red and greenish yellow, fine and good, a good bearer. From Sept. to Jan. Manning's.

Striped Pearmain — A large green apple, with stripes of red. It is a fine apple. S. P. Fowler.

Endicott Flat-cap — Medium size, light yellow, covered with small red spots; has a spicy, pleasant flavor, moderately acid. October. Supposed to have been engrafted on the farm of Gov. Endicott, Danvers, New Mills. S. P. Fowler.

Middleton None-such — A red and yellow apple, of a peculiar spicy taste; a late fall or early winter apple, a good bearer. Andrew Nichols.

Cathead — Large and good, of the shape which its name indicates, but a shy bearer, and noticed only to caution farmers from being induced by the appearance and taste of the fruit to cultivate it extensively.

Winter Apples.

Baldwin — Well known.

Roxbury Russet — This well known and excellent variety requires a rich soil and attentive culture.

Rhode-Island Greening — Well known.

Blue Pearmain — A good apple, but does not keep well, is a shy bearer, and on the whole not worth cultivating.

Pennocks Red Winter — A great bearer. Manning's.

Lady — Small and handsome. Manning's.

Yellow Bellflower — Large and fine, a great bearer. Manning's.

Ribstone Pippin — Yellow russet and red, a rich apple, and a good bearer. Manning's.

Danvers Winter Sweet (or Epps's Sweeting.)— A most valuable variety, and a good bearer. Found in most of the orchards in Danvers.

Ortley Pippin — Yellow and red, fine high flavored. Manning's

Hubbardston Nonesuch — Large, red and yellow. Manning's.

Murphry — A fine Winter Apple. Originated in Salem. Manning's.

Pickman Pippin — A yellow apple, good bearer. Manning's.

Aunt Hannah. One of the most rich, pleasant and tender of early winter apples; yellow, dotted with brown or black. Not always fair, nor a sure bearer, but well worthy a place where variety is desirable. Nichols farm, North Danvers.

Rock Apple — Too hard to be ground for cider, or masticated even by good teeth in the fall and winter, but juicy and good in May and June following. Nichols farm, North Danvers.

Green Sweeting — This sweeting, although not so large and handsome as the Danvers sweeting, is a great bearer, and keeps through the winter.

Pears.

For the following catalogue of Pears we are indebted to Robert Manning, Esq., of Salem, and on his authority (there can be none better) they are recommended as suitable for cultivation in this county. How enviable will be the farmer who shall be able in a few years to exhibit a Pear Orchard containing all these varieties.

Andrews. Very fine pear, ripening in September.

Ah Mondieu. Great bearer, handsome, juicy, but not high flaflavored. August and September.

Autumn Superb. Great bearer, very fine, large and handsome. October.

Beurre Diel. Good bearer, large and very superior. October.

Easter Beurre. Keeps till May, great bearer, and excellent.

Williams' Bon Chretien. (Bartlett) Great and early bearer. September.

Buffum. Great bearer, not rich, but fine for the market. Oct.

Capiaumont. Large, fine and handsome, great bearer. Oct.
Cushing. Fine pear, of native growth, bears well. Oct.
Dix. Very large, handsome and delicious. Oct. Nov.
Duchess Angouleme. Great bearer, and very fine. Nov.
Early Sugar. Earliest of all pears, great bearer.
Summer Frankreal. Pale yellow, good bearer, and excellent. September.
Harvard. Produces abundantly after the trees have attained a large size. Sept. Oct.
Heathcote. Fine pear, good and early bearer. October.
Henry IV. Great bearer, not handsome, but excellent. September and October.
Johonnot. Very delicous, medium bearer. September.
Julienne. Small fruit, great bearer, very fine. Aug. Sept.
Madeleine. Bears abundantly every year, one of the best early pears. August.
Long Green. Fine fruit, medium bearer. October.
Passe Colmar. Excellent, great and constant bearer. November to March.
Raymond. Very fine, good bearer. Sept. Oct.
St. Ghislain. Superior, small, but handsome, good bearer. Sept.
Seckle. Well known, one of the best of pears. Sept.
Skinless. Very fine flavor, medium bearer. August.
Summer Thorn. (Green Satin.) Good, bears well. Sept.
Urbansite. Great bearer, and excellent. Oct.
Washington. Good pear, bears well. Sept. Oct.
Wilkinson. Beautiful and good, great and early bearer. Oct. November.
Dearborn Seedling. Good and handsome, great bearer. Sept.
Fulton. Fine pear, native of Maine, good bearer. Oct.
Surpass Virgouleuse. Very fine, great bearer. Sept. Oct.

This list of Plums and Cherries is furnished also by Mr. Manning.

Plums.

Bingham. Large and yellow, very fine. August.
Coe's Golden Drop. Fine late Plum, September. October.

Italian Damask. Great bearer, very fine.
Green Gage. The best of all Plums, not a good bearer. Aug.
Imperial Gage. Large, yellow and good, greatest bearer of all.
Orleans. Fine Purple Plum, great bearer.
Washington. Very large and fine, but not a good bearer.

Cherries.

Mayduke. Dark red, when ripe, good bearer. June.
Black Tartarian. Very superior, but a tender tree.
Black Heart. Well known, and a great bearer.
White Bigarrean. Large and excellent, good bearer.
Davenport. Ripens with the Mayduke; good.
Downer's Late. Fine and productive. July.
Etton. New fruit from England; good bearer.

On the subject of *Flowers*, the exhibition of which contributed much to the interest of the Show, a few words will express all we feel required to say. It is not desirable that Flowers should either be extensively cultivated by our farmers, or entirely neglected. They constitute a beautiful part of the Creator's works, and are capable of exerting a most benign influence on the hearts and minds of men. They furnish food, which the intellect feeds on and enjoys. Carefully nursed and neatly arranged about a Farm-house they command the notice and admiration of travellers or visitors to a greater degree than far more costly architectural ornaments. Day unto day they utter the praises of Him—

> Whose Sun exalts,
> Whose breath perfumes them, and whose pencil paints,

and proclaim the elevation of sentiment and the refinement of the taste of their cultivators; so intimately associated with the love of truth and virtue is a taste for the beauties of nature, that where the latter is discovered the former is believed to exist also. Hence rose bushes, peonies or honeysuckles, lilac bushes, a bed of pinks, daffodils, lillies, or dahlias tastefully grouped

about a farmer's domicil prove to him a letter of recommendation and credit to every intelligent passer by, which to him and his may prove productive of important consequences. The committee therefore did not hesitate to award a few small gratuities for flowers. In determining to whom among the generous contributors to the Show of Fruits and Flowers, these rewards should be given, they were governed on this occasion by this principle—viz: To give the gratuities to those who contributed most largely to the interests of the show or furnished information of the greatest value to the Society.

The gratuities awarded were as follows:

To Robert Manning, Salem,	$2
Francis Putnam, Salem,	2
Abel Nichols, Danvers,	2
John Gardner, Danvers,	2
Stephen Driver, Salem,	1
Kendal Osborn, Danvers,	1
Edward Lander, Danvers,	1
James Foster, Beverly,	1
John M. Ives, Salem,	1

ANDREW NICHOLS,
Per order of the Committee.

ON CUTTING AND PREPARING FEED FOR HORSES AND CATTLE.

Economy of food is a matter of great importance to farmers; and this applies not only to the saving from waste by gathering up the fragments so that nothing be lost, but likewise to the mode of dispensing or applying it, that the smallest amount may be given required for the nourishment and health of the animals who are to be sustained. It is impossible to go much among farmers, without being struck by the prodigality and wastefulness with which, especially in abundant seasons, the food of our

brute animals is managed; and I have often been led to the conclusion that not a third of the number is supported on most farms which might be advantageously kept; and those, likewise, from injudicious management or culpable neglect, in an inferior condition. As much discretion and care are required in the disposal of our produce, as in raising and harvesting it; and, to farmers properly regardful of their own interest, there are equal motives for the one as the other. Indeed, it is less mortifying to fail in obtaining our crops, than, after having obtained and stored them, to see them wasted through ignorance, carelessness, extravagance, or improvidence. Regularity in feeding, to the health and thrift of the animal, is almost of equal importance with abundance; and the mode or form in which the feed is given is not of less moment both in regard to he animal himself and the uses and advantages of the feed.

This is a subject which has much occupied the attention of intelligent and inquisitive farmers; and the present general scarcity of hay and fodder throughout the country, so much increased by the early and most extraordinary severity of the first month of winter, and the consequent high prices of every kind of agricultural produce, renders the subject, at this time, of peculiar importance. I have made such experiments myself as fully to satisfy me of the great economy and advantage of cutting all long feed, hay, straw, and corn fodder, for horses and neat cattle; and am convinced that the saving may at least be put down as one third of the expense; and in some cases, where the price of hay has been very high, fully one half; and these trials have not been merely ocuasional and accidental, but the experience of many years. I have ample details on this subject in my own journals, but I prefer to give the experiments and opinions of others. Into these I shall go pretty largely, as far as I may deem them interesting and important.

Parkinson, in his Treatise on the Management of Live Stock, thus speaks of "feeding horses in America." Vol. ii. p. 156. "The Dutchmen have introdnced a method of feeding horses in America, which I consider superior to any mode I ever saw practised. I tried it when I resided in that country, and found

it both good and cheap. The method pursued is, they chop rye straw, about an inch or an inch and a half long, and put it into the manger, two or three inches thick; they then sprinkle some water over it, making it all wet alike as nearly as possible, care being taken that there is no superfluous water, as that would destroy the intention of the process; that done, they carefully mix some rye meal, finely ground, the finer the better, among the chopped straw; a very small quantity of rye meal will be sufficient for a bushel of the cut straw. This causes the horse to use his teeth much, thereby thoroughly masticating the straw, which is all tinged with the rye meal, for, being more gluey and tenacious than the meal of any other kind of corn, it will not separate or fall off by the horse moving the food about with his nose, which is one reason why it is preferred; and the straw being so long is much better than if it were cut shorter, for if it were not longer than a barley corn, the horse would swallow much of it without chewing. Walking along the streets of Philadelphia, I saw those men putting a quantity of rye straw, chopped in the manner described, to their horses. At that time, I thought it a bad way to chop straw long, as the horses I had fed with straw in that state, shuffled it about the manger, and threw much of it out, wasting some of the corn likewise. These horses stood in the streets night and day, during the most severe weather, tied to the pole of the wagon, with a trough fixed upon it, so narrow and shallow that I supposed the horses must toss a great deal of it out, but seeing they did not, I stopped to look at them. As I had not then particularly noticed their food, they told me that there was rye meal mixed with it, which, when I examined, I found cleaved to the straw like glue, it being so nicely incorporated that every straw had its portion of meal, and thus the horses did not commit any waste."

The horses to which Parkinson here refers, were the fine team horses, which, in teams of four and frequently eight horses, finely caparisoned, with wagons bearing some resemblance to a canal boat for size and tonnage, and with their jingling bells, were so frequently seen in Market street, in their journies to and

from Pittsburgh across the Alleghany mountains. I have often admired them as much as Mr Parkinson; their large stature; their fine athletic frames; their healthy condition; and have equally admired the economical mode of feeding them.

The next authority I quote is that of Richard Peters, Esq., of Philadelphia, a name always to be in the highest measure revered by the friends of an improved agriculture. A more enlightened, active, disinterested, devoted friend to the cause, has never appeared among us. In a letter dated April 8, 1817, he says, "I find a wonderful saving of provender by chaffing it. I account for the utility of chaffing, by its exposing more points for the extraction of nutriment, to the maceration of the liquids in, and the action of the stomach, or stomachs, of animals. And no provender is wasted, as it is by feeding it entire, either by negligence in servants, or uselessly passing through the viscera. I have strong hopes that the practice of chaffing will be a great relief in this season of comparative scarcity. We are so much accustomed to abundance, that we have never studied or practised the economy which necessity enforces. Three bushels of my chaffed hay weigh a stone, fourteen pounds, and this is enough for a horse, with a common allowance of oats or chopped grain, for twenty-four hours. Very little more will be sufficient for a horse standing idle, without other food. Mr. Jones saves more than the wages of a man in a year, viz. more than seven tons of hay, in the keep of his four horses; for I allow five hundred pounds of hay, including waste, to keep a horse for a month. In the common and careless manner of feeding, this quantity will not do it. So that in an extensive concern, a farmer will be well paid by keeping a hand exclusively for chaffing his long provender. Yet I believe on common farms his time would not be half occupied in this employment."

I subjoin to this an extract of a letter from Mr. Jones, the gentleman above referred to, addressed to Judge Peters, about the same time. "My attention to feeding my horses, four in number, with cut hay, by measure, commenced in the fall of last year, in consequence of a publication I saw in one of our city newspapers, in which were detailed great advantages that had

been derived from adopting that practice. Experimenting on that mode of distributing hay to the number of horses above mentioned, I found or as nearly as I could calculate, a saving of thirteen hundred pounds per month. I have since extended the practice to the whole of my farm stock of cattle, and believe the saving to be in the same ratio as stated relative to the horses, In addition to this saving, may be added the advantage of an intermixture of cut corn stalks and other descriptions of food that would not be eaten separately, and without being chaffed. My horses and cattle are all healthy, and look well."

The next statement which I shall give, is that of Thomas Williamson, from the Balt. (Eng.) Society's papers, bearing date, November 1812.

" My horses, five in number, have been regularly worked at the plough in pairs. The oxen, four in number, have worked in collars, drawing generally a stout beaverstone plough, or a large drag and scuffler. Their labor has been constant, and rather severe. As our meadows began to fail us towards the end of September, owing to the quantity of stock upon them, it became necessary to allow the oxen more and better hay. The increased expenditure alarmed me, as the four oxen and five horses consumed no less than four tons within one month. This caused me to prohibit the use of hay in the racks, and to feed all the cattle with chaff, of which a boy can cut sufficient for daily use in two hours. My servants not only ridiculed the change, but, as far as they dared, opposed it in an underhanded manner, by various pretexts and evasions. Aided by the care and vigilance of the young gentleman with me, the system of chaff feeding was fully established; and the quantity needed for the horses and oxen, separately, ascertained.

" One hundred weight of hay was found to yield twenty bushels of chaff, pressed into the measure, and piled as high as it could safely be carried; consequently each bushel weighed about 5½ lbs. It was found that the five horses would eat twelve bushels of chaff during the twenty-four hours; and that the four oxen would consume an equal quantity in the same time. Ever since the oxen have been fed with chaff only, they have very

evidently improved in condition, as have also the horses, altho' their work has latterly been on heavier soil, and of course more severe than formerly. Twenty-four bushels of chaff, at twenty bushels to the cwt., amount to about 21½ tons yearly, which, deducted from 48 tons, (the quantity we were consuming within the year,) gives a saving of about 26½ tons, or more than half.

" I have, however, carried the retrenchment further, by cutting in bean stalks to the exent of about a quarter of the chaff. These being laid uppermost in the cutting trough, keep the hay well pressed, and cause it to be cut more regularly. Thus we now use about 25 cwt. of hay monthly, instead of four tons."

The next statement which I shall give, is Benjamin Hale's account of the saving made by the use of Hotchkiss' Straw Cutter, employed to cut hay and straw as fodder for horses, as given in the Massachusetts Agricultural Reports, vol. iv. p. 400.

Mr. Hale is proprietor of a line of stages running between Newburyport and Boston.

The whole amount of hay purchased, from April 1 to October 1, 1816, (six months,) and used at the stage stable, was,							
	tons.	owt.	qrs.	lbs.			
	32	4	0	10			
at $25 per ton, (the lowest price at which hay was purchased in 1816,) amounted to						$800	00
From Oct. 1st, 1816, to April 1st, 1817, whole amount of hay and straw purchased for, and consumed by, the same number of horses, viz.							
	tons.	cwt.	qrs.	lbs.			
Straw,	16	13	3	10	$160 23	510	23
Hay,	13	14	1	00	350 00		
Deduct on hand April 1st, 1817, by estimation, four tons more than there was Oct. 1st, 1816, at $25 per ton,						100	00
Saving by the use of the straw cutter, 4 months of the last 6 months, or the difference in expense in feeding with cut fodder and that which is uncut,						389	77

Whole amount of hay used for the horses of the Salem stage, 25 in number, from April 1st to October 1st, 1816, viz.

tons.	cwt.	qrs.	lbs.
22	0	0	0

at $30 per ton, (lowest price in Salem,) 660 00

Whole amount consumed by the same number of horses, from Oct. 1st, 1816, to April 1st, 1817,

	tons.	cwt.	qrs.	lbs.		
Straw,	15	13	0	0	$187 80	268 80
Hay,	2	15	0	0	81 00	

Saving in using chopped fodder five months, 391 20

Total saving in using the straw cutter nine months, viz.

At Newburyport, 4 months, $389 77
At Salem, 5 months, 391 20
Total, $780 97

The member of the Board of Trustees of the Massachusetts Agricultural Society to whom the above account was communicated by Mr. Hale, was informed by that gentleman that he used no more grain from October, 1816, to April, 1817, than was used from April, 1816, to October, 1816."

I shall now quote from the "Complete Grazier."

"Steamed chaff (meaning the refuse of wheat, &c.) may be given to milch cows with great advantage. For this important fact in rural economy, the Grazier is indebted to the ingenious and persevering experiments of T. C. Curwen, Esq., whose judicious zeal for the improvement of agriculture is too well known to require any eulogy. In giving the steamed chaff to the cattle, 2 lbs. of oil cake are mixed with one stone of chaff, and the milch cows and oxen are fed with it morning and evening, having an allowance of one stone at each time. One great advantage attending this method was, that most, if not all, the milch cows were in such a condition, that, with a few weeks feeding after they were dry, they became fit for the shambles, with very little loss from the first cost. As a substitute for chaff and oil cake, Mr. C. recommends cut hay, which, when steamed, would make a much superior food; and, he entertains no doubt, would greatly augment the milk, as well as benefit the health and condition of the animals. Of this there can be but little question; for straw, or even the corn (wheat) husk, which is

said to contain more nutriment, can add but little to the product of milk; it may keep some animals from starving, but it will never improve their flesh; and it may be received as an axiom, in feeding all animals, that the value of the feed is in proportion to the quantity of nutritive matter contained in its component parts. Bulk is also necessary to sustain the action of the stomach; but it serves no other purpose."

In another place, after referring to Parkinson's account of his horsekeeping, before mentioned, the writer goes on to say, "but to have occasioned this great expense, the straw must have been chopped very fine, which is not merely unnecessary, but even objectionable; for mastication will be better effected if it be cut rather long; and that operation is of the first necessity, as regards the digestion, and consequently the nutriment of the animal. In the south of Europe, more particularly in Spain, where many fine horses are bred, hay is generally unknown; and the straw, upon which, with barley, they are wholly kept, is always given only partially cut as rack meat, and never as chaff. In Kent, however, but more especially in the eastern part of that county, the teams are kept entirely upon short-cut straw and unthrashed oats, given in the manger, the oat sheaves being estimated to produce above seven bushels of grain weekly for a team of four horses; or if clear corn be given, the common allowance is four bushels of oats and two of beans; and some farmers, it appears neither allow corn nor hay, but give about two hundred weight of beans, with an unlimited quantity of straw and perhaps a small portion of sanfoin hay cut into chaff."

My next reference will be to some experiments detailed by Sir John Lindain: for though the mode of feeding adopted in England differs materially from that used in this country, they knowing nothing of our Indian corn, and we as little of their horse bean, yet the experiments are, on every account, valuable and instructive.

"Mr. Willan, who is interested in so many stage coaches to and from London, formerly used to consume every year about 10,000 quarters of oats from the port of London, and about

2,000 quarters were bought at country markets, for the horses he kept two or three stages distant from London. Prior to the high prices of last year, he allowed his horses as much corn and hay as they would eat; and on an average they consumed 2 pecks or 16 quarts of oats per day, and every 20 horses had a load of 18 cwt. of hay per week. For the last twenty years, with the exception of the two last, the best hay (which it was always necessary to purchase for stage coach horses) might, on an average, be about £5 per load; but last year it rose from £6 to even £10 per load; and oats this year (1812) rose from 20s. to £4 and upwards, per quarter; at which price, if oats had been given in the usual quantity, it would have been impossible to carry on the business of stage coaches. It became necessary, therefore, either to give up that concern, or to hit upon some new mode of feeding horses.

"Beans had formerly been purchased, before the new harvest began, at from £3 to £3 10s. per quarter. In the expectation of beans continuing at nearly this rate, Mr. Willan was led to erect a machine to be worked by two horses, for crushing beans and cutting chaff at the same time; and for some time he found considerable advantage from the practice; but beans gradually rose in price, until they reached £6 per quarter. Even at that price, however, he finds it of advantage to use *old* beans, mixed with new oats and chaff, in the following manner. Having harvested well a considerable quantity of oats, it occurred to him that it would be of use, instead of threshing the corn, (i.e. the oats. H. C.) to cut the straw and oats together into chaff; and now to each horse he gives per day, the following quantities of food, namely: 1. Half a bushel of cut chaff, amongst which there is probably about a quarter peck of oats, but which must vary according to the season, whether favorable to the production of straw or corn, (oats.) 2. Half a peck of crushed old beans; and, 3. Half a peck of new oats. This mode of feeding Mr. Willan considers as healthful for the horse, and enables him to go through the severest labor. The public advantages to be derived from this mode of feeding horses are of the greatest importance. The expense of feeding horses may thus be con-

siderably reduced, the benefit of which is obvious. Even the hardest working horses may thus be fed, either altogether without hay, or with a less proportion of it, which will render it unnecessary to keep such extensive and most valuable tracts of land in a state of permanent grass, when the produce can be so much increased by the use of the plough."

* * * * * *

"An eminent coach-master in Lancashire, Mr. Brotherton, of Rainhill, has likewise favored me with some important information regarding his improved mode of feeding horses. He had been accustomed, from 1802 to 1811, to allow 8 horses, every 24 hours, three Winchester bushels of oats and one bushel of beans, but no hay or chaff. During that period, he lost a great number of horses every year, to the amount of from 14 to 17 on an average, which he attributes to his having given them too much corn, and more than the stomach could digest. This led him to try a small proportion of hay; and he afterwards adopted the following plan:

To every 8 horses he allows one bushel of oats, one bushel of beans, and three bushels of cut hay, and straw or clover mixed, of the best sort that can be purchased, the expense of which he thus estimates: —

1 bushel beans, - -	£ 0	12*s.*	0*d.*
1 bushel oats, - -	0	7	0
3 bushels cut hay, straw and clover,	0	1	0
Expense per day for 8 horses,	£ 1	0	0

that is 17*s.* 6*d.* for each horse per week, besides 5*s.* worth of hay per week, making the expense of each horse per week, 22*s.* 6*d.* A considerable saving thus arises, compared to the feeding wholly with oats, besides a great reduction on the quantity of oats consumed. Mr. Brotherton never crushes his beans or oats, thinking it unnecessary, when the horses get clover, hay and straw, mixed with their corn. But he admits before they got that mixture, that the beans and oats often passed whole; and it would certainly be advisable to adopt the crushing plan, more especially with very young or very aged horses, as the

necessary machinery can easily be had, attached to a threshing mill. He cuts the hay and straw very short, and gives it a preference to clover, if it has been cut before it has been seeded, and is well harvested. He never threshes his oats, if well harvested, but cuts them in the machine altogether. This, however, renders it impossible exactly to ascertain the difference of expense between the two systems. His horses are now as healthy and able to do their work as ever he knew them; and he has lost only one horse since he adopted the new plan. If he had fed his horses according to the former plan, at the price which corn now fetches, it would have cost him at best £1 16*s.* 2*d.* for each horse per week, but according to the new plan, they only cost, as has been already stated, £1 2*s.* 6*d.*, making a difference of no less a sum than 13*s.* 8*d.* on each horse per week or £35 10*s.* 8*d.* per annum. Such experiments as these, conducted on a great scale, cannot be too generally known and practised."

It is well known, (continues Lindain) that a bushel of corn, when boiled or bruised, or a hundred weight of hay or straw, when cut, will go much farther than when entire. If a horse is compelled to grind or cut these articles with his teeth, the labor occasions a diminution of strength and the additional time it requires lessens that which might be devoted to repose. It is now generally admitted that the saliva is of less use in promoting digestion, than was formerly believed to be the case; and that this important operation is performed chiefly by the gastric juices of the stomach. If therefore the nourishment is put into the stomach in a state fit for the gastric juice to eat upon it, whether that is performed by machinery from without, or by the teeth within, is of little consequence."

My next statement will be that of William Phillips, Esq., dated Philadelphia, June 10, 1824, and addressed to John Hare Powell, Esq.

"In reply to your inquiry respecting my experiments in the use of corn fodder, and opinion of Eastman's Chaff Cutter, which I have had in operation for some time, I with pleasure communicate the entire satisfaction which both have afforded me. It is

hardly necessary to say that the corn is cut before the sap is dry, stacked in the field, the fodder bound in bundles after it is husked, and preserved in as dry a state as possible.

* * * * * *

Since I have used fodder thus prepared, I have kept from twenty-six to thirty-five head of cattle, besides horses and sheep during the winter, and have used at least ten loads of hay less than when I kept only twelve. In the spring my cattle were in better order than usual."

The next statement which I shall quote is that of Amos Sheldon, Esq., of Beverly, Mass, a gentleman with whose character as an intelligent, excellent, and successful farmer, I have the pleasure to be well acquainted.

Beverly, Jan. 25, 1834.

Mr. J. R. Newell,

Dear Sir: It is with pleasure that I comply with your request, asking the result of my experience on the subject of feeding stock. My stock consists of fifty-one head, namely: 8 horses, 4 oxen, 35 cows, and 2 yearlings. This stock was fed in the usual way, with English, salt, and fresh meadow hay, with meal and potatoes, as their case required, until the 1st of Dec. last, at which time I commenced chopping my hay. In giving my experience, I must, in some measure, ask the privilege of a Yankee, viz. that of guessing; but in this case I think I can guess pretty correctly, as much of the hay has been loaded, in consequence of having to remove it from one barn to another, and calculating the number of days a load would last, the result is as follows:

700 lbs.	of English hay,	at $16	per ton,		$5 60
200 "	fresh do.	4	"		40
100 "	salt do.	8	"		40
3 bushels	corn meal,				2 25
8 "	long red potatoes,				1 60
			Per day,		$10 25

400 lbs. English hay chopped, at $16 per ton,		$3 20
100 " fresh do. do.	4 "	20
100 " salt do. do.	9 "	40
3 bushels corn meal,		2 25
4 " long red potatoes chopped,		80
140 gallons pure water,		0 00
One man at $8 per month,		31
Board of man at $1 50 per week,		23
	Per day,	$ 7 39

Balance in favor of straw cutter, $2 86 per day.

In addition to the above balance may be added an increase of six gallons of milk, and likewise something for the improvement of the condition of my whole stock."

The above statement being in some respects deficient, and especially wanting the exactness which is extremely desirable in such cases, I took the liberty, through the columns of the New-England Farmer, of addressing some inquiries to Mr. Sheldon; and some extracts from his reply, which I here subjoin, will be read with interest.

" As it respects the queries of H. C. concerning the potatoes, &c., I will here give an account of the whole process. In a central part of my barn, I have a room 18 by 12 feet; this is ceiled with boards which make it tight and warm. In this room is a pump and a pen 10 by 10 feet, which is made water tight; the hay being chopped and thrown into a heap, outside this room, early in the morning a sufficient quantity is put into the pen to feed the whole stock once, to which is added water enough to moisten it, then meal and potatoes, when the whole is mixed with a four tined fork, until every part of the hay receives its proportion of the meal and potatoes, then it is given to the cattle in baskets. This process is followed three times each day, morning, noon, and sunset; the whole of which is performed, excepting giving it to the cattle, by a man whom I hire for eight dollars per month. In regard to chopping the potatoes, I do not think it is of much consequence, excepting they are more easily and

uniformly distributed among the hay, which is of some consequence, as when not chopped the cattle will devour the potatoes first, when I think it is better that the whole should be eaten together."

I subjoin in the last place, the experiment of a friend, which came under my own observation; a gentleman whose skill and good management in all the departments of his husbandry, entitle him to great respect. I take it from my note book of March last.

Mr. M. R. Clapp, of Westminster, Vt., has now for three weeks kept two horses, two colts, two cows, and five young cattle, from two to three years old, upon feed prepared thus: 12 bushels of rye or oat straw cut fine and mixed wet with 24 quarts of cob meal, (Indian corn ground on the cob) furnishes the supply for a day. The horses have had a little hay, but two thirds of their living has been from this supply. The cows, since calving, have had a little hay. The colts had a little hay at first, as this food scoured them too severely; but this, with these small exceptions, constitutes the feed of the stock. The cows were rather thin — the horses, colts, and young cattle, in excellent condition. Three men, in half a day, cut enough to last one week — 12 bushels of cut straw weigh about 100 lbs., or 8 lbs. per bushel basket full.

I submit the above statements to the reader, without further comment, being unwilling to extend this long communication. The intelligent farmer will at least find in them strong and encouraging motives for farther experiments.

H. COLMAN.

Meadowbanks, January, 1836.

STATE OF THE FUNDS, &c.

OF THE ESSEX AGRICULTURAL SOCIETY.

Receipts, &c.

Balance in the Treasury on the 1st of Jan. 1835,	$684 27
Received of the Mercantile Bank, dividends,	42 00
" " Merchants " "	36 00
" " Salem, " "	17 25
" " Warren " "	78 00
" " Exchange " "	48 00
" " Commercial " "	22 00
Interest on Deposits in Warren Bank, - -	15 03
Of 16 new members, fees of admission, - - -	48 00
Of individuals, on their Notes, and interest, -	330 00
Refunded, on advance for premiums, - - -	60
Bounty from the Commonwealth, - - -	600 00
Amount of credit,	$ 1921 15

Payments, &c.

Premiums awarded in 1834, -	$114 60	
Premiums awarded in 1835, -	205 60	
Bills contracted in 1834, -	234 61½	
Bills contracted in 1835, - - -	93 70	
Three shares in Warren Bank, -	316 87½	
Loaned on interest, - - -	100 00	
	$1065 39	
Balance cash in the Treasury, January 1, 1836,	855 76	$1921 15

ANDREW NICHOLS, *Treasurer.*

A STATEMENT OF THE PROPERTY OF THE ESSEX AGRICULTURAL SOCIETY.

JANUARY 1st, 1836.

In the Warren Bank, Danvers,	13	shares,	par value,		$1300	00
" Mercantile Bank, Salem,	7	"	"		700	00
" Merchants " "	6	"	"		600	00
" Salem " "	3	"	"		300	00
" Exchange " "	12	"	"		800	00
" Commercial " "	11	"	"		733	33
" Savings " "	Oct. 16, 1834,				616	12
Promissory Notes, with satisfactory sureties,					420	00
Cash in the Treasury,					855	76
				$	6325	21

ANDREW NICHOLS, *Treasurer.*

As the Committee, who were appointed to examine the Treasurer's accounts, have not been able to meet for this purpose, I have thought it best to publish this statement, without their certificate. I have compared it with the books and documents of the Society, and believe it shows correctly the pecuniary concerns — excepting the outstanding bills of 1835, and the premiums awarded which have not been claimed — which together will amount to three or four hundred dollars. These will have to be met by the cash on hand.

JOHN W. PROCTOR, *Secretary.*

Danvers, January 2d, 1836.

FARMER'S SONG,

Written by Dr. ANDREW NICHOLS, and sung at the Annual Meeting of the Society, 1835 —— Tune, "*Bonny Boat.*"

The Farmer's life we love, although
Harassed by toil it be;
Contented, to *hard work* we go,
None happier than we.
We love the lands we cultivate,
The cattle that we rear;
Sloth, vice and slavery we hate,
But count free labor cheer.
CHORUS—We cast our seed on well tilled ground,
We dress our crops with care;
And when the harvest time comes round,
We earth's abundance share.

We envy not the rich and great;
The humblest farmer's lot
Is better than a vast estate,
By fraud or rapine got.
By healthful toil we win our bread
Beneath the glorious skies,
Enjoy the beauties round us spread,
And high God's bounties prize.
CHORUS—We cast, &c.

From early dawn to closing day,
To plough, plant, weed, or mow,
The Farmer, whistling, hies away —
His wife as busy too,

To wash, to churn, to cook, to sweep,
By turns her hand she plies,
Stops but to rock her babe to sleep,
Or hush her children's cries.
CHORUS—We cast, &c.

'Tis busy life, yet often here
Th' affections of the heart
In holiest purity appear,
And highest bliss impart.
We thankful take what God bestows,
And learn to feel and know
That the best cure for human woes
Is industry below.
CHORUS—We cast, &c.

We strive to culture heart and head,
Our lives from vice to free,
And trust, like well filled grain when dead,
Life-giving bread to be,
To more successful enterprise
Than we ourselves have known;
Or seed, whence future crops shall rise
Superior to our own.
CHORUS—Our morals grown on well tilled ground,
Our habits reared with care,
We trust, when here no longer found,
To heaven's abundance share.

PREMIUMS OFFERED

BY

THE ESSEX AGRICULTURAL SOCIETY.

1836.

I. MANAGEMENT OF FARMS.

For improvements and skill, in the management of a farm, taking into view the lands, stock, produce, &c., with all its appendages:

The best,	thirty dollars.
The second,	twenty-five dollars.
The third,	twenty dollars.
The fourth,	fifteen dollars.

REMARKS.

Notice of intention to claim these premiums, must be given to the Secretary, or the Chairman of the Committee, on or before the 20th of June, the present year.

The Committee will examine the Farms that may be entered, about the 1st of July, and the 1st of September.

An accurate description of the Farm, and statement of the crops and produce, &c., will be required to be furnished by the claimants to the Secretary, previous to the 1st of December.

Farmers will bear in mind that these premiums are not offered for the largest number of acres, or to the wealthiest owner, but

to him who improves in the best manner what he has, whether it be *one* or *ten*, and offers the best example for imitation.

The Committee to view, the present season, are

JOSEPH KITTREDGE, *of Andover.*
ELIAS PUTNAM, *of Danvers.*
ELIPHALET EMERY, *of W. Newbury.*
HECTOR COFFIN, *of Newbury.*
PICKERING DODGE, *of Salem.*
THOMAS WEST, 2D, *of Haverhill.*
JOHN W. PROCTOR, *of Danvers.*

II. DAIRY.

1. For the best butter produced on any farm within the county, from the 1st of June to the 9th of July, inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibited, with a particular statement of the method of making and preserving the same, seven dollars.

For the second best, six dollars.
For the third best, five dollars.
For the fourth best, four dollars.

2. For the best produce of butter, on any farm within the county, in the four months next following the twentieth of May, the present year — a sample of not less than twenty-five pounds of this butter to be exhibited at the anniversary of the Society — *quality*, as well as *quantity*, to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, twelve dollars.

For the second best, eight dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county, in the months of *June*, *July*, *August* and *September*, in the present year, a sample of which, not less than fifty pounds, to be exhibited, ten dollars.

For the second best, eight dollars.

REMARKS.

These premiums for butter are now placed in a form that almost every farmer *can*, if they *will*, avail themselves of the benefit of them. By endeavoring so to manage the dairy as to deserve a premium, every such manager will be sure to find it. And what more creditable recommendation can a farmer's wife or daughter have, than to have it said of her, that she manages her dairy better than any other in the county.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as a manure, on not less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.

For the second best, ten dollars.

IV. FOREST TREES.

For the best plantation of *White Oak Trees*, raised from the seed, not less than one acre, nor less than one thousand trees, in the third years growth, thirty dollars.

For the second best do. twenty dollars.

For the third best do. ten dollars.

For the best plantation of *Locust Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Larch Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *White Ash Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Chesnut Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

REMARKS.

Notice of intention to claim any of these premiums, the present season, must be given to the Secretary, by the 15th of June. The Committee to examine the plantations are

JAMES H. DUNCAN, *of Haverhill.*
ANDREW NICHOLS, *of Danvers.*
GARDNER B. PERRY, *of Bradford.*
JOSEPH KITTREDGE, *of Andover.*
PICKERING DODGE, *of Salem.*

A statement, in writing, of the entire process of cultivation will be required from the claimant.

V. CULTIVATION OF MULBERRY TREES, SILK, &c.

1. For the best plantation of White Mulberry Trees, not less than half an acre, twenty-five dollars.
2. For the second best, twenty dollars.
3. For the best nursery of White Mulberry Trees, not exceeding two years growth, twenty dollars.
4. For the second best, fifteen dollars.

☞ The foregoing were offered the last year, to be paid the present year.

5. For the best silk, produced and reeled within the county, amounting at least to one pound, seven dollars.
6. For the second best, five dollars.
7. For the most valuable parcel of silk, produced by the enterprise of one family, the present year, and exhibited either in cocoons, reeled, or manufactured, seven dollars.

☞ The same parcel not to be entitled to more than one premium.

9. To the person who shall be found in the autumn of 1837, to have improved or increased his present means of prosecuting the culture of silk to the greatest extent, and upon the most economical and practical plan, within this county,

twenty dollars.

10. To the second greatest extent, fifteen dollars.

11. To the person who shall fit up a building, room, or apartment, which, from its size, shape, fixtures, means of ventilation, &c., &c., shall be judged best calculated to secure the health and growth of the silk worm, afford the best convenience for feeding, cleaning the shelves, or stands, and fixing the arches, &c. for the cocoons, and which, from its simplicity and economical structure, shall be such as may be generally adopted by those who may engage to a considerable extent in the silk culture, a premium of thirty dollars.

REMARKS.

All applications for the foregoing premiums must be accompanied with statements of the expense of time and money incurred, the whole management of the trees, worms, &c., the method of reeling and manufacture of the silk, and whatever may be necessary to enable the committee, and all concerned, to judge of the expediency of encouraging the farmers of the county generally to engage in the culture of silk, to estimate the benefits which may result to others from the knowledge of the experiments and practices of the claimants, in the prosecution of this new and interesting business.

It is the object of the society to reward valuable improvements only, and consequently it will not feel bound to pay the premiums offered, unless something superior, more valuable, and better of its kind, is exhibited than those nurseries, plantations, and specimens of silk, &c., for which premiums have heretofore been given. On the other hand, gratuities will be given, should any valuable invention or improvement in the cultivation of the white or Chinese mulberry trees, the management of silk worms, the manufacture of silk, or any thing calculated to promote the

object in view, be exhibited, and for which no particular premiums are offered.

Applicants for the ninth and tenth premiums will bear in mind that it is for the amount of food for silk worms which their trees, in 1837, shall be adjudged capable of producing, more than their trees, if any they have, produced last year, (1835,) that these premiums are offered, and that a statement of the number and condition of their trees the present spring, certified by disinterested witnesses, will be required. These premiums are designed to effect two objects — the planting of new nurseries, and the improvement and preservation of nurseries and plantations for which premiums have been paid by this society.

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, twelve dollars.

For the second best, eight dollars.

VII. PLOUGHING

I. DOUBLE TEAMS.

For the best performance in ploughing, twelve dollars.
For the second, ten dollars.
For the third, eight dollars.
For the fourth, six dollars.

II. SINGLE TEAMS.

For the best performance in ploughing, ten dollars.
For the second, eight dollars.
For the third, six dollars.
For the fourth, four dollars.

REMARKS.

Double teams will be required to plough not less than one sixth of an acre, and single teams not less than one eighth of an acre. Double teams not less than *seven* inches deep. Single teams not less than *five* inches deep. The ploughs must be of the best construction, the furrows truly cut, and well turned. The whole must be done in a workmanlike manner. So many premiums have already been awarded for ploughing, and so great have been the improvements in the construction of ploughs, that nothing less than the best of work will be satisfactory. Those who intend to be competitors in the ploughing match, must give notice to the Secretary, on or before the Monday previous to the Exhibition. Persons residing more than ten miles from the place of exhibition, can have their teams, intended to be used in the field, fed at the expense of the society, the night previous, by calling on B. Goodridge, at the Essex Coffee House, in Danvers.

VIII. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the Show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

IX. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of

the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used and the expense of raising the same ; the experiment to be made in the three winter months, twenty dollars.

For the second best, fifteen dollars.

For the third best, ten dollars.

☞ These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for three years.

X. CIDER.

For the best barrel of cider that shall be produced at the Exhibition in 1836, made within the county, a premium of fifteen dollars.

For the second, eight dollars.

REMARKS.

If the cider offered is found worthy of the *first* premium, it will be taken to be used at the table, without any additional payment. The claimant must furnish the committee with a statement in writing of the entire process of making and preserving the cider.

XI. CULTIVATION OF WHEAT, RYE AND OATS.

For the best conducted experiment on the raising of wheat, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of rye, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of oats, on not less than one acre of land, ten dollars.

☞ A statement of the produce, the manner of preparing the ground, the kind of seed used, the manner of preparing the same, &c., &c., including all the details in relation to the crop, will be required to be handed to the committee.

XII. ANIMALS TO BE PRODUCED AT THE EXHIBITION AT DANVERS, ON WEDNESDAY, SEPTEMBER, 28TH, A.D. 1836.

1. For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the county, at least nine months from the day of exhibition, ten dollars.
   For the second best, five dollars.
2. For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk, and the manner in which she has been fed, ten dollars.
   For the second do. seven dollars.
   For the third do. five dollars.
3. For the best heifer, that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, seven dollars.
   For the second do. five dollars.
4. For the best pair of working oxen, taking into view their size, power, and the manner in which they have been trained, ten dollars.
   For the second do. seven dollars.
   For the third do. five dollars.
5. For the best pair of 3 years old steers, do. seven dollars.
   For the second do. five dollars.
   For the best pair of 2 years old steers, do. six dollars.
   For the second do. four dollars.
   For the best pair of yearling steers, do. four dollars.
   For the second do. two dollars.
6. For the best bull calf, 4 months old, three dollars.
   For the second do. two dollars.
   For the best steers, do. three dollars.
   For the second do. two dollars.
   For the best heifer, do. three dollars.
   For the second do. two dollars.
7. For the best boar, five dollars.
   For the second do. three dollars.

For the best breeding sow, five dollars.
For the second do. three dollars.
For the best litter of weaned pigs, not less than *four*, from two to six months old, six dollars.
For the second do. three dollars.

XIII. HORSES.

For the best horse raised in the county, not less than *three* nor more than *five* years old, ten dollars.
For the second do. eight dollars.
For the third do. six dollars.
For the fourth do. four dollars.

XIV. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.
For the second best do. do. three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, three dollars.
For the best straw or grass bonnet, five dollars.
For the second best do. three dollars.
For the best wrought hearth rug, having regard both to the quality of the work and the expense of the material, three dollars.
For the second best do. two dollars.
For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, five dollars.
For the second best do. three dollars.
For the best piece of flannel, a yard wide, and twenty yards in quantity, four dollars.
For the second best do. do. two dollars.

For the best wrought woolen hose, not less than four pair, two dollars.
For the second best do. one dollar.
For the best men's half hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth, not less than twenty yards, four dollars.
For the second best do. two dollars.
For the best piece of linen diaper, not less than twenty yards, three dollars.
For the second best do. two dollars.
For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.
For the second best do. two dollars.
For the best specimen of wrought lace, three dollars.
For the second best, two dollars.
For the best specimen of work, performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.
For the second best do. two dollars.

And should any other article of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

XV. FRUITS AND FLOWERS.

A convenient room will be furnished for the Exhibition of Fruits and Flowers—and a Committee will be appointed to examine and report upon the same. All who are interested in improving the Horticulture of our County, are invited to lend their aid to this part of the Exhibition; which it is hoped will be *charming to the eye*, and *delicious* to the taste.

GENERAL REMARKS.

All claims for Premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his Agent, on or before 9 o'clock, A. M., of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

Claims for Premiums on Farms, must be entered with the Secretary on or before the 20th day of June, the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to increase the funds of the Society; and will not be paid after that time. There will be deducted *twenty per cent.* from all premiums awarded to persons not members of the Society, at the time when the premiums were awarded; except they be for articles of domestic manufacture or to females.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the condition on which the premiums are offered; and gives *notice as required* of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality.*

By order of the Trustees.

Attest, JOHN W. PROCTOR, Sec'y.

January 2d, 1836.

REPORT ON AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements *Report* — That the interests of the farming community require that individuals of ingenuity and skill should direct a portion of their exertions for the improvement of the common implements used upon a farm, with a view to improve those already in use, or to introduce others whereby manual labor may be lessened or saved. And, from the almost universal patronage which has been given to the improved ploughs, the committee are confident that any valuable improvements in other articles will receive an attention which will abundantly compensate for any expense of time or labor that an experienced and mechanical genius might devote to any improvements in agricultural tools.

There were but three articles entered with the Secretary, neither of which, in the opinion of the committee, came within the rule for premium.

One was a straw cutter, presented by Pickering Dodge, of Salem, very simple in its construction. It is believed by the committee that it can be worked easier and will cut faster than any article of the kind offered equally cheap — the price in New York being $24. They would recommend to the Trustees to grant a gratuity of two dollars to Mr. Dodge; and they would recommend to all disposed to use a hay cutter, to examine this presented by Mr. Dodge.

Daniel Putnam, of Danvers, presented a harrow, similar in its construction to the cultivator, except the teeth, those being like the common harrow. From the experience I have had, I consider the teeth of the cultivator preferable, and as the difference in cost is inconsiderable, and probably in favor of the cultivator, I would recommend that article, rather than the harrow. And the committee are confident, from actual experiment, that it would be for the interest of every farmer to use a cultivator, rather than a plough or harrow, among all hoed crops, the teeth of the cultivator being so shaped that they work the whole surface between the rows, without throwing the ground into ridges.

There were two wagons presented by Joseph Spaulding, of Danvers — one designed for a pleasure carriage, the other for

burthen. They were made of good materials, and the workmanship was good; there was nothing, however, new, which would be considered an improvement, save in the hubs, those being cast iron. From the knowledge the committee have, they are not prepared to recommend them for general use; neither would they discourage a fair experiment being made.

The same gentlemen presented a pair of carriage wheels, of superior timber and workmanship; for which the committee recommend a gratuity of $2.

Per order of the committee,

MOSES NEWELL.

September 30th, 1835.

NAMES OF NEW MEMBERS.

In 1835,

AMOS SHELDEN, *of Beverly,*

MOSES CARR, *of West Newbury,*

JOSEPH HOWE, *of Methuen,*

HUBBARD EMERSON, *of Lynnfield,*

AHIRA PUTNAM, *of Danvers,*

SYLVESTER ABBOTT, *of Andover.*

ENOCH BRADLEY, *of Haverhill,*

WILLIAM FOSTER, 3d, *of Andover.*

NATH'L J. LORD, *of Salem.*

NOTE. Any respectable citizen of the County, twenty one years of age, can become a member of the Society, by paying to the Treasurer the sum of *three dollars.* He will then be entitled to a copy of the annual publication, usually being a pamphlet of about 100 pages, without any additional assessment. Gentlemen who have it in their power to communicate interesting *facts* and *experiments*, calculated to improve our mode of cultivation, or relieve the laborious task of the Farmer, are respectfully requested to forward the same to the Secretary,—and particularly the *young men*, who have sprung up, since the ardor of a PICKERING, and others, who formed the Society, has ceased to animate them, are solicited to come forward and show themselves the worthy descendants of noble Sires.

OFFICERS OF THE SOCIETY.

Elected, September, 1835.

EBENEZER MOSELEY, *of Newburyport*, PRESIDENT.

HOBART CLARK, *of Andover*,
DAVID CUMMINS, *of Salem*,
JAMES H. DUNCAN, *of Haverhill*,
SOLOMON LOW, *of Boxford*,
} VICE-PRESIDENTS.

ANDREW NICHOLS, *of Danvers*, TREASURER.

JOHN W. PROCTOR, *of Danvers*, SECRETARY.

TRUSTEES.

DANIEL ADAMS, 3D, *of Newbury*.
STEPHEN BARKER, *of Andover*.
ANDREWS BREED, *of Lynn*,
JEREMIAH COLEMAN, *of Newburyport*.
HECTOR COFFIN, *of Newbury*.
NATHANIEL FELTON, JR., *of Danvers*.
DANIEL FULLER, *of Middleton*.
MOSES FRENCH, *of Salisbury*.
EDWARD FORD, *of Beverly*.
FREDERIC HOWES, *of Salem*.
NATHAN W. HAZEN, *of Andover*.
WILLIAM JOHNSON, JR., "
JOSEPH KITTREDGE, "
AMOS KIMBALL, *of Boxford*.
DANIEL P. KING, *of Danvers*.
R. AUGUSTUS MERRIAM, *of Topsfield*.
RICHARD JAQUES, *of Newbury*.
MOSES NEWELL, *of West Newbury*.
DANIEL PUTNAM, *of Danvers*.
JESSE PUTNAM, "
DEAN ROBINSON, *of West Newbury*,
JEREMIAH SPOFFORD, *of Bradford*.
BOWMAN VILES, *of Lynnfield*.
ERASTUS WARE, *of Marblehead*.

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TRANSACTIONS

OF THE

ESSEX

AGRICULTURAL SOCIETY,

FOR

1836.

VOL. II.—NO. VI.

PUBLISHED BY ORDER OF THE SOCIETY.

JANUARY, 1837.

SALEM GAZETTE PRESS.
1837.

AN

ADDRESS

BEFORE THE

ESSEX AGRICULTURAL SOCIETY,

AT DANVERS, SEPTEMBER 28, 1836,

AT

THEIR ANNUAL CATTLE SHOW.

BY NATHAN W. HAZEN.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM:
PRINTED AT THE GAZETTE OFFICE.
1837.

ADDRESS.

Mr. President and Gentlemen,

WHATEVER praises may be offered to Agriculture, there are some indications that it is not at this time the favorite pursuit in New England. Many farmers, especially those who enjoy a competency, do not choose it for their children. Many of those who have been bred to it, seize the earliest opportunity for engaging in other pursuits. Others who are contented with it as a vocation prefer to follow it in the praries of the West, rather than on their native hills. There is a burning anxiety for distinction, and a feverish thirst for money, which scorn the old, beaten and approved paths to wealth and consideration. The quiet usefulness of the farmer is falsely thought to be thrown into the shade by the tinsel of professional life, and the delusive, and now prevalent spirit of speculation contemns his gains as trifling, and his occupation as tame and unenterprising. Whatever may be said of the pleasures and importance of Agriculture, it is practically considered that it does not offer the readiest way to the fulfilment of those hopes in which youth is now taught to indulge, and if not actually an impediment, that it is not the best help to that distinction which it is the right of one as much as of another to acquire. The opinion still prevails that there is an advantage from profession that is independent of effort, and of personal character and qualification.

As some proof that such a disposition exists, and to illustrate its consequences, it may be remarked that the agricultural products of New England have been for some years falling short of the demands of the population, and that the increasing deficiency has been supplied from the South and West. There are some

facts which show in a striking manner the extent to which this supply has been already furnished. Two years since it was ascertained that nearly three thousand barrels of flour were carried to one of the largest agricultural towns in this county, for the consumption of its inhabitants. An intelligent and extensive trader in the interior of the State of Maine, and not in the vicinity of any considerable lumber district, estimates that he sold flour, the last season, to as large an amount as he received of cash for his whole sales. Beef and pork packed in Ohio, have been freighted through the Notch of the White Mountains to the fertile intervales that lie towards the head of the Connecticut. Within a few years a mercantile house in Boston purchased in a single season, from the county of Worcester, nearly two million pounds of pork, the growth and produce of that county ; and the same house is now employed in obtaining the same article of provision from the West, to sell for consumption in that very county. The last year, a season by no means of uncommon scarcity, commenced the importation of breadstuffs to this country from the old and populous nations of Europe. We are told that arrangements have already been made for importing in the present year fifty thousand bushels of wheat from the single port of Liverpool, and we are promised that these importations will be made upon such terms as to reduce materially the present prices. It is no less remarkable, and no less illustrative of the degree to which agriculture has fallen behind other pursuits, that neither the increased demand, nor the high prices of produce, have had much, if any, effect on the value of lands for culture, and that farms were never or seldom of more difficult sale than at present.

Without doubt this state of things may be attributed to various causes. It is proof however, either that a smaller proportion of the population is engaged in Agriculture than formerly, or that Agriculture itself is less productive ; that in the progress of society other pursuits have gone in advance of this, and that it can no longer be depended upon for the supply of those wants to which within a very few years it was more than adequate. Adapted as is agriculture to the nature of our civil institutions,

and the nurse as it has been of much of that high moral character for which New England has been honored; important as its interests must ever be in any community, its loss of even equal comparative advancement cannot be witnessed without deep concern. Indeed the present state of things can hardly be of long continuance. Any one of the thousand changes constantly occurring in the political world might at once and wholly alter their condition. This country is essentially agricultural, and without any contingency, it may well be doubted whether it can in the long run any better afford to buy its provisions from foreign nations than the farmer can afford to own a farm, and without other resources to more than half the expense of his maintenance, purchase from his neighbors the very things which his own land ought to supply, and if cultivated, would yield.

All other occupations are prosecuted at great comparative risk. The business of farming in New England has always had the advantage of great certainty. The very hardness of the cultivation has exacted great prudence in the expenditure, and its gains have been too small to tempt the cupidity of capitalists. But there are abundant proofs now before us, that it has not left industry, sagacity and skill, when applied to its service, unrewarded. Well directed and persevering efforts have been crowned with success alike profitable and honorable to their author. No where else has the fortune of the man been so entirely in his own hands, and by no other path has the attainment of independence been so free from fatal contingencies. No other class of men can reckon in their ranks so many instances of success. And when prosperity comes to the farmer it proceeds from no doubtful agency. There have been those who in other pursuits have amassed larger fortunes than Agriculture confers; but Agriculture, if we appeal to no higher authority, will assure us that all the gifts of fortune, beyond what itself bestows, are incumbered with vexation, or but minister to vanity. In the other classes of the community, the farmer sees as it were the vision of Mirza. "He beholds many in pursuit of bubbles that glitter and dance before them" until they tread upon some hidden danger "through which they fall into the pit and immedi-

ately disappear." But if a farmer is unthrifty, the progress of his decay is marked on his possessions; these for years tell the story of his decline to every passenger. In such instances, there have commonly been defects in the character of the proprietor which would much earlier have set the seal of ruin upon him in any other vocation. There is probably no occupation which in the aggregate has added more to the general wealth, and which has so surely led to competency in manhood and to ease in old age. A business which is attended with such results cannot reasonably be suffered to decline because it is not sufficiently profitable; for where it is safe to calculate so much, superior sagacity and enterprise may accomplish much more. This pursuit will always retain the advantage which it may justly claim from its certainty. In some seasons, drought, excessive rains, insects or frosts, may diminish or perhaps cut off the expected crop. The vicissitudes of wet and dry injure some lands, and benefit others. Frosts and insects are the only fatal and unsparing enemies from whose visitation no good comes to any. But the scarcity of one crop is supplied by the fulness of another, or the abundance of one year compensates the deficiency of another, so that an average of any five or ten years will not leave much difference of profits. The surplus may sometimes be large, and sometimes perhaps nothing may be left after paying the expenses of cultivation and providing for the support of the family. Still in the productions of the farm are found a very large proportion of those things, the purchase of which constitutes the expense of living. This advantage cannot be impaired by the numbers who are competitors. But as speculations or speculators multiply, their chances of success must be diminished. As the ranks of the professions are swelled, support must become more precarious. As the numbers of mechanics and manufacturers become disproportionate to those of the rest of the community, their profits will be decreased,—besides their constant dependance on the state of trade and the general prosperity. The very dereliction of husbandry, and the reliance of so many upon other occupations, have a tendency to increase their risks. When these chances of failure are better appreciated, when the

flattering hopes, that lead men into other paths, have ended in disappointment, they will seek safety, and even repose in the labors of agriculture.

But if these have a tendency to limit success, to leave the mind unoccupied and unexercised, to prevent the attainment of any elevation of character, then certainly the period and state of things, which would turn men back to them, should be met with regret instead of exultation. The causes of such effects, if such there be, must be sought in the circumstances of cultivation, such were not the purposes of nature. We cannot overlook that adaptation of all created things to the ends for which they were designed, so complete that we cheerfully rely upon it as conclusive proof of the greatest of all truths, the existence of an Infinite Creator. He created the plants of the earth, and man with all his faculties, and "made them crescive in their quality." He ordained the plants and the minds of men to grow by man's cultivation. The culture of the understanding and of the fruits of the earth, are equally duties, though perhaps not in equal degree; and the proper performance of the one cannot be presumed inconsistent with the due discharge of the other. It cannot be supposed that man has been created with an inevitable necessity of engaging in labors not compatible with the growth and exercise of the higher attributes of his nature. If he has been designed for such employments, they are fitted to man as he is — a being possessed of reason and affections intended to be strengthened and purified, elevated and enlightened, through a progress of illimitable perfection. Agriculture cannot be intended to check, but rather to facilitate this progress. Rightly practised, it must tend to accomplish in man the purposes of his creation. It is true that as governments have been commonly framed and administered for the benefit of the few, and against the rights of the many, the agricultural classes, owing to a variety of causes, have usually been those from whose oppression the means of supporting this order of things have been drawn. In their scattered dwellings, in ignorance, and with no means of acquiring knowledge, in constant view of an entire equality of wretchedness among all who labor; with no extensive inter-

course, even among their own class, and without concert, it has been easy to maintain unequal laws over them, without much apprehension of resistance. It has therefore been the effect of most political institutions to depress this interest into a state of subordination and vassalage, so that it might be wielded without any will of its own, as the interest or ambition of the more favored class, called the State, should dctate. Such is now the debased condition of the laboring classes of Europe. Not content in general with drawing from their earnings, what may be required to support the luxury of their landlords, precautions have been taken to prevent the laborer, though he may sometimes a little influence his condition, from rising above it into another sphere. The laborer has no share of political influence; no participation of political power, and by the attempt to exercise any, he would in most countries incur the guilt of treason.

The same classes which in other governments are thus proscribed, are here the depositories of all political power. They are in any sense of fact or theory, THE PEOPLE. On their moral and intellectual character depend the honor and prosperity of the nation. These require that their ranks should be full of those who understand the trusts reposed on them, and in those ranks should be found such inducements as will engage the affections, and animate the hopes of youth. They should be able to discover in them their way to that estimation and respect, of which it should be the object of all education to make them seek to be worthy. When agriculture loses the services of youth, and they desert its fields for other employments, it is as though spring should he struck from the seasons of the year, or should forget to bloom.

In order to this, the spirit of improvement which is diffusing itself so largely into every other department of life, should in *this* be animated. If the agricultural products of Europe are now to be met in our own market, the competition must be met with new efforts, or the agriculture of our country will still more decline.

If the whole population of the Union should be collected upon New-England, if her commerce and manufactures were then

to be increased in still greater proportion than this increase of the population, from what shores, and by what navies should the provisions for her supply be freighted? England, on an extent of territory considerably less than that of New England, contains a population equal to that of the whole United States at the last census. Yet such is her confidence in the resources and products of her own agriculture, that the importation of all such articles as they can supply is restrained. How wonderful is the spectacle, when having provided for her own consumption, we see that narrow island, loaded and crowded with its millions, excelling the world in arts and commerce, imparting from the stores of its abundant fertility, grain for the food of the people scattered over this broad continent. What an illustration is this of what agriculture may be made to accomplish! Yet all the improvements, that have made the agriculture of that country so productive, date back to a period little beyond the last half century. Before this time land was looked upon as a source of power, rather than of revenue. The object of cultivation was a mere and a very wretched subsistence. The only modes of cultivation were those which descended, like their religion and their laws, from their ancestors. Such however, since that time, has been the progress of improvement, it is now doubtful, whether with all the advantages of labor saving machinery, the advances made in manufactures have much exceeded those made in agriculture. In the meantime the increase of her population has only been equalled by that of the United States. The stock to be maintained from the products of the soil has multiplied in a still greater ratio. A greater luxuriance in the productions of the earth, the fruit of a richer culture, has added to the size and improved the symmetry of the domestic animals. At the beginning of the last century, the average gross weight of the cattle brought to the market in Smithfield, did not exceed three hundred and seventy pounds, and that of sheep, twenty eight pounds; the present average weight of cattle in the same market, is eight hundred pounds, and of sheep eighty pounds. And the limits of improvement are by no means supposed to be attained. It is the opinion of practical men best acquainted with the subject, that the raw produce of

the Island might well nigh be doubled, without any greater proproportional expense being incurred in the production.*

Previous to 1763 no improvements had been made in the agriculture of Scotland. There was no rotation of crops; fallows were unknown; the process and the implements were alike wretched; neither turnips, clover or potatoes had been so much as heard of, but corn followed corn in unbroken succession.† To introduce the new systems, which have been attended with so much improvement, has been the work of a few names as well entitled to the memory and honors of posterity, as any that are borne on the pages of history. It will be the dawn of a brighter day to this interest, when more adequate justice is done by public opinion to the merits and services of its benefactors. The title of Father of Scottish Agriculture, conferred on William Dawson, was an expression of public gratitude scarcely less honorable to his countrymen than to him. By the system of culture which he introduced, the production has grown to be twelve times greater than formerly, while the fertility of the soil is kept up with a proportionate increase of profits.

We thus see that in Great Britain agriculture has furnished hands for the labors of manufactures, and has then run with them an equal race. There manufactures have been multiplying, and villages springing into existence in the same manner as in our own vicinity. The land has there been tasked to equal the produce to the demands, however large they might be. Something approaching to the same effect may here be witnessed in the immediate neighborhood of manufacturing settlements. They have encouraged farming by creating a demand, and providing a ready market for its products. Still even in these districts the supply is very deficient and the prices high. If hitherto manufactures have nourished agriculture, it cannot be told how soon manufactures may seek a return of the benefit, in the form of a more abundant and cheaper supply.

The example of England teaches what may be effected by

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* Edinburgh Review, No. 126. † Edinburgh Review.

systematic and scientific modes of cultivation. So far that country furnishes a model for imitation, and no farther. Better would it be that our agriculture should retrograde an hundred years, than that any conceivable improvement in it should be purchased by the adoption of the policy of that country, under which this increase of production has been effected. The landlords grasp all the profits, and amid this immense accession of national wealth, the laborer, who has earned it all, receives only the boon of the exchange of wheat bread instead of rye. An increasing family, sickness or old age write his name on the list of paupers.

It is true that the agricultural improvements made in Great Britain have been effected under commercial regulations directly designed for their encouragement. The tenure of lands has enabled one hand to grasp the profits of many. By these and other means the price of land has been kept so high that no man, not already in the possession of riches, could purchase, and so many have been in this situation, with no dependance but their labor, that they have been obliged to work on such terms as the landholders imposed. In this manner to the rich has been applied the stimulus of large gains, and to the poor that of an unbending necessity. The rich have made farming a study, and applied to its management the rules and principles of science. The labors of the tenant have received direction from the studied skill and scientific knowledge of the landlord.

We learn from this that there is an art in this business, and that science may be of the greatest advantage in its direction. Within the fifty years preceding 1814, about 500 volumes were published in that country on agricultural subjects, and the titles of books appearing in the quarterly lists of new publications since that time would seem to indicate that the annual numbers have increased. This contrasts strongly with the small catalogue hitherto published in the United States upon similar subjects, as contained in your pamphlet of 1834.

In New England the landholder and the laborer are united in the same person; and in order to the highest improvement of agriculture, he should combine the industry of the British laborer, which he already possesses, and the philosophy of the British

landlord, of which it is to be feared he is sometimes deficient. In this mode only can it be practically elevated to the rank of a science ; and by this mode the example of England teaches us that labor may be facilitated, products increased in amount and value, and new worth given to lands.

It is admitted, indeed it is enforced as a truth necessary to be understood, that all our other institutions call for the exercise of mind, and in most others a part of the fruits of success will be some degree of intellectual distinction. Agriculture has often been supposed to be a trade which a man might follow without much, if any previous training, in which success depended on the bones and sinews alone, and in its pursuit knowledge, beyond a very limited extent, would be useless. That however widely or brightly the rays of science might shine, into this broad department of human life they need not, and could not penetrate. Perhaps it has been owing, in no small degree to opinions like these, that this avocation has lost some of the favor which it enjoyed. If it were once well established that it affords a field for mental effort, the mind would here seek for distinction. It would then be a part of the business of the farmer to cultivate precisely the same faculties, and to exercise the same powers of mind that in other lines of life lead to elevation. The effects of such a conviction would be alike favorable to the general interests of husbandry, and beneficial to the character of the cultivators.

There are some indications that the old and indiscriminating hostility to the use of books is passing away, and that a more favorable disposition to listen to them is taking its place. The general principles of agriculture may certainly be learned from books, and indeed many of them are to be learned only from books or from instruction. Hardly any individual observation could be sufficient to establish them. Still there are farmers, who even at this day do not supply themselves with a large amount of reading upon these subjects. It will never be fancied that the mere reading of books can make a farmer ; although one who reads books without any practice, may be as well entitled to be called a farmer in any sense of merit or praise, as one

who is commencing cultivation, but never reads upon the subject of his labors. If it be true that agriculture is the most important of all interests, how does it happen that it can derive no aid from the recorded lessons of wisdom and the testimonies of experience? It is easy to account for the prejudice which often shuts it from such aid. The practice of the particular neighborhood is early learned by imitation, and as much observation, as would serve for this purpose, has been the whole agricultural education of youth. The prevalent practices just serve for the purposes of life, and it seems irrational to be called to the study of the theory, when one has advanced beyond that, to a thorough acquaintance with all the practices, in the narrow circle of his information, known to exist. But the practice thus learned may be neither the easiest, cheapest, or most productive. A few hours reading might suggest some improvement, that would greatly abridge the labor and increase its profits. Reading should not supplant labor, and labor need not supplant reading; they should mutually relieve and enlighten each other. Agricultural books should make a part of the property, and agricultural reading a part of the business of the farmer. It would be easy for him to give his children and apprentices a taste for the knowledge thus to be obtained, and a sense of its importance, by pointing them occasionally to the various modes of cultivation described in the books, or contrasting them with those practised by himself. By such a union of practice and reading, this pursuit is brought into a close resemblance with those deemed the exclusively intellectual. The farmer in such enquiries does precisely what is done by the professional man. He ascertains facts, weighs testimony, analyses the opposing statements and reasons, and finally applies in practice the truth elicited to the state of facts presented by his own farm.*

The practicability of combining theoretical knowledge with a practical, vigorous and successful cultivation is not an experiment of doubtful results, nor one which remains to be tested in this Society. Its records furnish examples derived from every

* In some of the States, especially the Western, agricultural books and papers compose a part of the premiums offered.

town in the county, of persons of the highest respectability, of the greatest weight in the community, and of the best talents in the highest cultivation, combined with an invigorating devotion to the daily labors of the field. The object to be gained, is to spread the influence of such examples, and to impress on the whole farming community the truth that the same means of elevation are open to every farmer, and that the use of them stands inscribed high on the catalogue of his duties. If nothing is to be gained by the study of agriculture, then certainly the writing of books, and the preparation of reports are quite useless; and their authors not only misspend their own time and labor, but they may be the occasion of a far greater waste in the community. Writing and printing are mere ostentation and vanity, if the matter is to end here, and here it is to end, unless what has been published is to be taken up, considered, reconsidered, and permitted to influence and guide the practical farmer. To what end was it, that your late lamented President, the venerable Pickering, gave his last days and the full ripeness of his wisdom to recording for your use the fruits of his long experience and acute obervation. His knowledge, while it embraced all the practical details of husbandry, comprehended also the whole of its philosophy. Whether he wrote upon the culture of Indian corn, or the more abstruse theme of the food of plants, he was equally clear, precise and practical. His political labors and honors may be forgotten, when his services to agriculture shall be freshly remembered with increased respect and warmer gratitude.

In the Address delivered before you at your last anniversary, it is stated to be "a great object of the farmer to obtain the most valuable produce, with the least possible labor, and at the same time to keep his farm in a state of progressive improvement." What are the requisites to the accomplishment of this truly great object? What profession requires the combination of more skill, knowledge, calculation and perseverance? If he would obtain the most valuable productions, he must be acquainted with all productions, their modes of culture, and all the improvements made in those modes in all parts of the world. But this know-

ledge may only mislead him, unless he is also acquainted with all the circumstances and peculiarities of soil, climate and situation, in order to understand whether the products or modes of culture are adapted to his own farm. How much knowledge, embracing how many subjects; how much much skill and calculation are required in order "to obtain the largest produce with the least possible labor"? And all this not only without exhausting, but on the contrary, increasing the fertility and productiveness of his farm?

If a farmer subjects his lands to an unvarying routine of crops; if he ploughs a field merely because it has run out, and he knows no other means of renovation; if he lays it down again, merely because it has been ploughed and tilled just the number of seasons that he ploughs and tills all his lands, without the smallest reference to varieties of soil and situation, will he be likely "to obtain the most valuable products with the least possible labor, and to keep his farm in a state of as great progressive improvement," as would be effected by a more various and intelligent course of husbandry? If such a mode requires more labor than another that might be adopted, does he not lose the profit and advantage that might have been derived from that excess of labor otherwise bestowed? Labor is a part of the capital of the farmer, and his employment of it will determine the measure of his prosperity. It is the object of all practical science, and in all arts, to increase the products of this capital. Much of the business of the manufacturer consists in giving to labor its utmost possible effect. The wonderful results of labor saving machinery, whose operation he constantly witnesses, impress this principle of economy strongly upon his mind, and to its application to his own business he is always bending his care and invention. It is no less important to the farmer; and he who brings to the subject the most ingenuity, and gives to it the most thought, will be best able to appreciate its advantages, while in the consequent prosperity he will reap his ample reward. Much to this end may be accomplished by the skilful construction and arrangement of farm buildings and fences; much by the plan, order and season of labor; much by the mode of the performance of the work, and

much by the judicious selection and adaptation of seeds, implements, manures and animal strength. In short every movement on the farm, whether of permanent arrangement, or of daily labor, is, in this respect, a matter of gain or loss. Whatever can be accomplished in this way towards diminishing the charges of production, is so much added to the profits of the business. All such intellectual and mechanical contrivances which lessen the amount and expense of labor, are as necessary and as much superior in point of public utility to the same improvements in manufactures, as the objects of their production are more necessary.

One of the first results that will spring from the adoption of more scientific views, will be greater system in the management of farms. Your attention was called on a former anniversary to the deficiencies arising from a want of system.* It has been said that there is no business so made up of minute details as that of the farmer, and it is always mentioned as one of the inevitable disadvantages to which agriculture is subjected, that it does not admit of those divisions of labor, which so much facilitate manufactures.

It is obvious that the greater is the number of circumstances incidental to an occupation, the stronger is the necessity for their reduction to the best possible method and order; and the less chance there is for a division of labor, the more regularity should there be in the order in which its details are committed to the hands of the operator.

The adoption of system in husbandry is apt to induce that minute attention and close observation on which its success so much depends. Every thing in its turn and degree will then receive the care and attention which are its due. The profits of nearly all business are made up from small gains and savings, the fruits at once of frugality and vigilance. These are the life blood of agriculture. If they are wasted, its vigor soon feels the decay; its resources become exhausted; the means of improved and extended cultivation fail; industry seems fruitless; labor finds only half its returns; the farmer has reached the meridian of his years; independence and ease still lie at a distance be-

* Address of Hon. James H. Duncan, 1830—p. 10.

fore him; he sees the infirmities of age waiting to beset him on the way; he loses the animation of hope and sinks into the perplexed and negligent husbandman. Such doubtless is the history of many a farm and many a farmer, who needed nothing but a systematic beginning to have brought the one early to fertility, and the other to independence.

The proper size of farms has been the subject of much discussion. The opinion that in New England they are too large, seems to be very uniform. The fact thus indicated cannot but be greatly prejudicial to the interests of agriculture; and the evil would certainly be reformed if the business should be subjected to more accurate calculation. Should a merchant plan his vessel so large, and exhaust so much of his resources on the hull, that he could furnish her with no more sails and rigging than were suited to a much smaller vessel, could only half fill her with freight, and must then send her to sea half victualled and half manned; or if we should see a whale ship with all her appointments sent on a voyage for mackerel, it would need no argument to convince us of the folly of the projectors. But do not these instances fairly illustrate the conduct of the farmer who persists in holding an extent of land under the forms of cultivation, over which he may indeed make his annual pilgrimages in careful search after the scanty and timid crops; around and about which the fences are attenuated and stretched until their existence becomes a problem, and whose whole culture, with whatever industry it may be prosecuted by its owner and such aid as his narrow means enable him to obtain, is but a manifestation of the willingness of the spirit and the weakness of the flesh? Land and wealth are often associated in idea, and it is overlooked that land is only the means of wealth when it is made the source of rent, or when it is made productive. If more is held than is made profitable by its annual rent or produce, the interest of its cost, its fencing and the taxes upon it are charges upon the farmer; and the price paid for it is so much deducted from the amount of money that he might otherwise employ in the superior cultivation and improvement of a smaller farm.

Some of the considerations that should determine the size of

the farm are very obvious. It should bear a just proportion to the means of cultivation that will be possessed.* The owner should be able to extend to every acre of it that degree of cultivation which subjects the soil completely to the purposes of man. Over his territory he should no where hold a divided empire with bushes, with exhaustion, unruly cattle, or mortgages. It should not be so large as to require more experience and skill than the owner will possess for its management, and its extent should not be such that its proper conduct will involve more business, and require more calculation than the talents and capacity of the proprietor can accomplish. Its size should in all respects be so much within his circumstances that it should in some degree impose upon him the necessity of a thorough cultivation. It should be such that he may not look for sustenance from the merely natural growth of the surface, but it should be such that he may feel the necessity for using some labor, and some art to increase the powers of production. The chief idea of agriculture in the Netherlands, where it is carried to so great perfection is, "to make the farm as nearly resemble a garden as possible." The adoption of a principle like this at the first setting out leads them to undertake the culture of small estates only. They have learned from experience, that ten acres under a good cultivation are worth more than forty under one that is deficient. The consequence has been that such is the skill with which farmers cultivate even a bad soil, that they compel it to return them a produce which the strongest and richest

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* In Scotland the expenditures and proceeds of farms are reduced to great certainty. In a species of banks, combining the capacities of banks for circulation and for savings, cash credits are advanced to the farmers upon the understanding that all the receipts from the farm are to be immediately paid into the bank. There is a difference of one per cent. interest between advances and deposites, in favor of the bank. By means of the accounts thus kept in the bank, the farmer and his creditor are kept accurately informed of the condition and prospects of the farm. In this is seen what may be accomplished by calculations and accounts which doubtless the farmer who values his independence will prefer to make and keep for himself.

lands of the neighboring province of Holland refuse to yield to a less judicious management.

Few subjects require more accurate calculation than those which belong to the economy of agriculture. The readers of the New England Farmer, and there are probably few members of this Society, who do not come within that description, will recollect a paragraph contained in that paper a few weeks since, stating the result of a calculation that had been made between having bars, or a gate for our inclosure, by which it was proved that if the bars were to be taken down once a day for one year, the difference in time would pay for three gates. This is a specimen of the computations that are to be made under this head. They are not questions of mere curiosity, but they result in realities of profit or loss. Suppose also the instance of a plough: it will last several years, but it is of inferior construction, will not do good work, and requires the application of more strength than another that might be obtained. Shall he continue to use it, or shall it be disposed of at any sacrifice? Without a knowledge of the structure of ploughs, and without a practised judgment, the farmer may never discover its defects, or should he make the discovery and attempt an exchange, he may obtain another just as defective. Without information he will not know the latest improvements. In order to decide correctly he should understand precisely the defects of the old implement, what change in its construction would adapt it to his own land, and the comparative advantages of a new one, and the expense of an exchange. If he means to conduct his business with certainty he will make these calculations, and not leave the result to time and chance; to the time when *by chance* he may bargain with a neighbor for a plough still worse perhaps than his own, or until it is worn out; and to the chance that it may require extra labor equal to the whole amount of what would otherwise have been his clear profits, — and effecting in the end a diminution of his property to many times its value. The manufacturer rejects, without a moment's hesitation, machinery found to be defective, and supplies its place by the best that can be fabricated.

Such are a few of the instances which may illustrate the ne-

cessity for the co-operation of mind and body in the conduct of a farm. That the mind is strengthened by exercise, and that whenever it may be exercised it may distinguish itself by superior strength and information, are positions too plain to admit of proof or illustration. The earth yields or withholds her fruits, makes them stinted or luxuriant, by the operation of fixed laws. It can need no argument to show that he, whose dependance is on the favorable operation of these laws, should have all the knowledge of them that can be acquired, and of all the means by which their favorable operation may be propitiated. If the cultivator has a full knowledge of the quality of soils, of seeds, of manures, of plants, of roots, of animals, and of all the influences that benefit or injure them, Nature is his counsellor and fellow laborer. All her powers are to him as labor saving machines. She diminishes for him the cost of her productions. She crowns with plenty and with gladness the devotee whose love has led him to study her character and honor her affections. All cultivation is but an awakening and bringing into use powers that would otherwise lie dormant. If we consider that no limit has yet been found to the products of agriculture, but that they have continued to increase with the progress of art, and that one discovery commonly leads to another, we may well conclude that there are powers in nature not yet awakened, combinations not yet formed, and that many fields yet remain for the conquests of agricultural genius.

If the farmer has the knowledge and ingenuity, the industry and skill which justly belong to his character, the appropriate testimonies will not be wanting. He needs the herald of no mercenary partisan. He builds his own monuments. The neatness and order of his homestead, the fertility of his fields, the perfection and symmetry of his stock, and the system with which his business is conducted, are all eloquent panegyrists upon the merits of their proprietor. The improvements that he may make; the new modes of culture, and the new articles of cultivation that he may introduce; the oaks that he may plant, and the records that he may leave of his own labors and experience, may bear his name with honor to other generations.

Certainly age and long experience may in some degree supply the place of science. But nothing can show more strongly the value of science, than the fact that those who have the most enlightened experience seek with the greatest avidity its lights and aid. How much would those who have grown wise by experience, have gained by a course of systematic instruction at the outset. If by such means individual success may be increased, the evils of dependance obviated, the Agricultural luxuriance of Britain rivalled in the free fields of New England, and the character of the people, intellectual, moral and social, elevated, then it is among our duties, as members of this Society, to disseminate Agricultural Knowledge, and to impress upon the community a sense of its necessity. Favored by Legislative bounty, and honored, as we are on this, the Farmer's Festival, by the presence of the Chief Executive Magistrate of the Commonwealth, we are bound to show that ours is not a barren soil, but that we will return the bounty a thousand fold in an increased production, and that we will emulate, though we may never hope to rival that intellectual excellence, so illustrious in another sphere.

By establishing the principle that science is necessary to husbandry, and mingling its acquisition with the labors of the field, that instruction of by far the most importance to individuals and to the community, the education of the heart, or virtuous habits, will be secured. With minds enlightened and characters pure, united with the manly independence which always makes a part of the Agricultural character, the farmers of New England need not abandon their own sphere to seek in another happiness or honor.

The scientific farmer will know when his work is done. He will plainly and distinctly discern the limits of human agency, and the boundaries of human power, and having done all and averted all which these allow, he will naturally look beyond them to discover his next reliance. In this view will be presented to him that Providence, whose Power and Goodness always surround him, and without murmuring and without repining, he will rely with confidence and hope upon the DIVINE BENIGNITY.

REPORTS.

No. I. COMMITTEE OF ARRANGEMENTS.

When the discourse of Mr. Hazen was concluded, Dr. Nichols, of Danvers, addressed the Governor and audience through the following REPORT:—

The Committee of Arrangements ask leave to report:—That they have had the satisfaction of seeing their plans and provisions for the day carried into execution without loss of time, and in a manner equal to their expectations. As a whole, the exhibition has perhaps been inferior to some of the Shows in former years. This they are willing to attribute to the unfavorable season and the inclement weather of the morning, rather than to a want of interest in the Agricultural community in the objects of the Society. The utility of this Association they are happy to believe depends not so much on the cattle and things exhibited at their Shows, as on the opportunities these afford the Farmers of the County, to become acquainted with each other, for consultations on subjects peculiarly interesting to themselves, and for offering up their united adorations to Him who giveth seed time and harvest, and who alone can crown the labors of the husbandman with success.

This day has also been rendered unusually interesting by the presence of His Excellency the Governor of the Commonwealth. In extending to your Excellency an invitation to attend on this occasion, the Committee belived it to be peculiarly proper that an exhibition sustained mainly by the bounty of the State should come under the supervision of its Chief Magistrate; and they felt confident that one so distin-

guished for performing with the strictest fidelity all the duties and proprieties of his exalted station, would be pleased to embrace the opportunity afforded him, to countenance and encourage one of the great interests of the Commonwealth by shewing himself personally interested in the success of its Agricultural Societies, and by manifesting a disposition to become acquainted with the wants of the industrious yeomanry of which they are composed. And your presence here, — for which the Committee in behalf of the Society tender you their hearty thanks, — assures them that they have not mistaken your views or feelings in these particulars.

Per order of the Committee.

ANDREW NICHOLS.

REMARKS OF GOV. EVERETT.

After the Report of the Committee of Arrangements had been read, Governor Everett rose and made his acknowledgments to the Committee for the manner in which they had alluded to the circumstance of his being present. He expressed his gratification at the exhibition of the day, and his confidence that the bounty of the State was beneficially applied by the Essex Agricultural Society. He stated that the wish had been expressed that he should address the audience. He felt that in complying with the request he stepped beyond the line of usage on such occasions, but he trusted the responsibility of his doing so would be considered as resting with the Committee, by whom the wish had been expressed.

The Governor added that he felt additional embarrassment in following the orator, who, in his very able and interesting discourse, had anticipated many of the general remarks appropriate to such an occasion. His only effort could now be, to subjoin a few observations, so simple as to present themselves without research, and he hoped important enough to bear a repetition, should it happen, as was very probable, that they had been already made by the orator of the day.

After some remarks on the nature and objects of cattle shows, and their beneficial influence on the state of the husbandry of this part of the country, Governor Everett proceeded substantially as follows :

The benefit, which has accrued to our farmers from these exhibitions, cannot be estimated in dollars or cents, or measured by the figures employed to state an increase of agricultural products. A few more tons of hay from your meadows ; a few more bushels of corn or potatoes from your tilled lands ; a better stock of animals for the dairy, the fold, or the pen, would add something, it is true, to the public and private wealth of the community ; but if nothing farther came of it, it would be a matter in which neither the patriot nor the christian could take a deep interest.

But when we consider, that the class of husbandmen is numerically the largest in the community ; and that on their condition it has been found, in the experience of the whole world, that the social, political, and moral character of countries mainly depends, it follows as self-evident, that whatever improves the situation of the farmer feeds the life-springs of the national character. In proportion as our husbandmen prosper, they not only enjoy themselves a larger portion of the blessings of life ; but society is kept in a healthy state, and they are enabled to make ampler provision for the education and establishment of their children, and thus leave behind them a posterity competent not only to preserve and assert, but to augment their heritage.

It will accordingly be found, that the great differences in the political condition of different countries coincide directly with the different tenure on which the land is held and cultivated. It is not that in one country the Government is administered by an elective President ; in another by a limited monarchy ; in another by an absolute despot. These things are not unimportant ; because forms have a tendency to draw the substance after them. But a far more important question, in deciding the political condition of different countries is, *how is the land held?* The orator has told us what is the case in many parts of Europe ; but there are countries where the case is still worse. There are countries where the land, the whole of it, is claimed to be the

property of an absolute despot, — rather a chief of brigands than a sovereign, — who once or twice a year sends out his armed hordes to scour the territory, to sweep together, without the shadow of law or pretence of right, whatever they can lay their hands on; leaving the wretched peasant little else than what he actually grasps with his teeth. Such is the system introduced into some parts of Hindostan, by their Mahometan conquerors, and it has had the effect of breaking down the civilization of countries once refined, learned, wealthy and prosperous, into a condition very little better than that of the North American savage. Contrast this with the system on which our lands are held and occupied, in pursuance of which, as a general rule, it is divided into small farms, the property of those who till them, who have every inducement and facility to better their condition, and who feel themrelves on an equality with their fellow citizens in every other pursuit. It is plain that over such a population no government could exist but one like that beneath which we live, in which the people are the direct source of power. Where this is the case, it is equally plain that whatever improves and raises the condition of husbandmen, tends directly to sustain and fortify the social fabric.

A very celebrated ancient poet exclaimed, "Oh, too happy farmers! did you but know your blessings." If this could be said of the farmers of Italy, at the close of the civil wars, subjects of an absolute prince, and a part of them only the owners of the land they tilled, it may well be repeated of the husbandmen of New England, the proprietors of a soil, which furnishes a competence of all the good things of life, and the possessors of an amount of blessings never surpassed, if ever equalled. Not among the least of these privileges, is the rich birthright of patriotic recollections which has come down to us from our fathers, and of which no portion of the country has more to boast than the ancient county of Essex. It is no mere compliment, sir; — the county of Essex is a distinguished part of the State. It would be easy, within the limits of this single county, to find, in the history of other times, bright examples of all the traits of character and conduct which promote

the prosperity and honor of nations, in peace and war. From the early contests with the Indians and French; from the time when the "Flower of Essex" fell at "Bloody Brook," down to the close of the revolution, the fathers and forefathers of those I have the honor to address, contributed a full share of the counsel and treasure, the valor and blood by which the cause of the country was directed, sustained, and carried through triumphant. Need I go beyond the limits of the town of Danvers? Is it not enough to recall the time, not beyond the memory I am sure of some whom I see before me, when a regiment of royal troops was here encamped, a sort of prætorian band to guard the residence of the royal Governor? Need I do more than remind you of the morniug of the 19th of April, 1775, when your sires, at the sound of the bell of yonder church, hastened together, a portion of them under the command of your venerable fellow citizen near me,* and rushed, rather than marched, to the field of danger, — sixteen miles in four hours, — flying into the jaws of death as rapidly as fear commonly lends men wings to fly from it; and contributing, — this single town, — this one little town, — oh, prodigality of noble blood! — one sixth of the entire loss of that eventful day. Need I, my friends, for the most touching recollections, go beyond the walls of yonder ancient church, consecrated, as it was, by the strange spectacle, (at the memory of which your tears were called forth afresh, on last year's return of the great anniversary,) — the sight of four of your brave sons wrapped in their bloody shrouds, the honorable wounds which they had received in their country's cause still freshly flowing? Could I before this audience, on such a theme, be wholly mute, would not the gray hairs of the veteran leader of that heroic band, who is now before me,† rebuke my silence, and put a tongue in every echo of this building, which would cry out and shame me!

Yes, fellow citizens, if any thing could make your native land, your homes, your firesides, more dear to you, it must be these

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* General Gideon Foster. † Gen. Foster.

recollections of the precious blood by which they were redeemed. If any thing was wanting to inspire you with a passionate attachment to the blessings you enjoy, it would be the thought of the inestimable price at which they were purchased.

Nor let us forget, if we have a patriotic ancestry to be proud of, and if we have privileges to enjoy, we have also incumbent duties to perform. The great principles of republican liberty are exposed to danger in peace as well as in war. Prosperity, not less than trial, may sap the foundation of the social fabric; and there is at all times less danger from a foreign foe, than from party passion, individual selfishness, and general apathy.

It will not, of course, be expected of me to enlarge upon the duties which devolve upon our husbandmen, with a view to guard against these dangers and perpetuate our institutions in their purity. I can but glance at the topic. But I may say, that the first and most important duty of the husbandman is to endeavor to preserve, and if it may be to strengthen, the broad foundation laid by our fathers in a deep religious principle. Surely there is no class of the community whose daily pursuits ought to furnish greater nourishment to the sense of religious things. The reflecting mind, it is true, beholds traces of a higher wisdom and goodness in every step of every walk of life; but the husbandman, who drops a seemingly lifeless seed into the cold damp earth, there in great part to decay; who sees the vital germ in a few days pierce the clod, rise into the air, drink the sun's rays and the dews of heaven, shoot upwards and expand, array itself in glories beyond the royal vesture of Solomon, extract from the same common earth and air a thousand varieties of the green of the leaf, the rainbow hues of the petals, the juicy or the solid substance of the fruit, which is to form the food of man and his dependant animals. I say, the intelligent husbandman who beholds this, seems to step behind the veil which conceals the mysteries of creative power, and sit down (if I dare so speak) in the laboratory of Omnipotence.

Connected with the cultivation of the religious principle, and the natural fruit of it, we look to our husbandmen for a high moral sense. The worst feature in the degradation of many for-

eign countries, is the moral condition of those who till the soil, shewing itself in the extreme of intemperance and the kindred vices. No man can fully understand this, who has not witnessed it. In the general moral character of our population, we are warranted in saying, that it might serve as an example to the world. I do not think that out of New-England, (and I repeat only a remark, which, within a few weeks I have heard several times from persons coming from other parts of the country,) you could assemble a concourse giving so much proof of sobriety, thrift, and industry, as is brought together in this town to-day, and might be assembled, on a similar occasion, in any town in Massachusetts. We look to our husbandmen, by precept and example to sustain, and if possible elevate, this sound state of morals in the community.

Lastly, that I may say a single word on a subject on which the orator has preceded me It is a great and just boast of the pilgrims and their descendants, that they made early and ample provision for education. Farmers of Essex, hold fast to that boast. I had rather for the appearance, if I must choose between them, see the country dotted all over, at its cross roads, with its plain little village schoolhouses, than have the high places of a few large towns crowned with the most splendid fabrics of Grecian and Roman art. I had rather, for the strength and defence of the country, — if I must choose between them, — see the roads that lead to those schoolhouses thronged with the children of both sexes, saluting the traveller as he passes, in the good old New-England way, with their little curtesy or nod, than gaze upon regiments of mercenary troops parading upon the ramparts of impregnable fortresses. Ay, for the honor of the thing, I had rather have it said of me, that I was by choice, the humblest citizen of the State making the best provision for the education of all its children, and that I had the heart to appreciate this blessing, that sit on a throne of ivory and gold, the monarch of an empire on which the sun never sets. Husbandmen, sow the seed of instruction, in your sons' and daughters' minds. It will grow up and bear fruit, though the driving storm scatter the blossoms of spring, or untimely frost overtake the hopes of au-

tumn. Plant the germ of truth in the infant understandings of your children — save, stint, spare, scrape, — do any thing but steal, — in order to nourish that growth ; and it is little, nothing to say, that it will flourish when your grave stones, crumbled into dust, shall mingle with the dust they covered — it will flourish, when that overarching heaven shall pass away like a scroll, and the eternal sun, which lightens it, shall set in blood !

No. II. ON THE DAIRY.

The Committee appointed on the Dairy have attended to their duty, and *Report* —

The only parcel of cheese offered for premium was presented by Jacob Osgood, of Andover — two cheeses offered, weighing more than 50 lbs. They were of a good quality. The committee considered Mr. Osgood to be entitled to the first premium of ten dollars.

There were six parcels of butter entered for premium, by the following persons, viz: Ebenezer King, of Danvers, Daniel P. King of Danvers, Amos King, of Danvers, two parcels by Mrs. Margaret Wardwell, of Andover, and Matthew Hooper, Danvers. The butter was all good, and very nearly of an equal quality. The committee, after a full examination, came to the determination to award

To Ebenezer King, of Danvers, for his June butter, the first premium of - - - - - - $ 7 00.

To Daniel P. King, of Danvers, the second prem. of 6 00.

To Amos King, of Danvers, the third prem. of 5 00.

To Mrs. Margaret Wardwell, of Andover, the first premium $12, for her fall butter, and the fourth premium of $4, for her June butter.

Matthew Hooper, of Danvers, presented 70 lbs. of good butter, nearly, but not quite equal to the butter to which the premiums were awarded.

Two samples of butter were presented for exhibition, which were very nice — one by Mrs. Lander, of Danvers, containing about 12 lbs.; the other by Daniel Putnam, Esq., of Danvers, containing 8 lbs., made from one cow in six days.

Respectfully submitted,

WM. JOHNSON, Jr., *per order.*

Sept. 28, 1836.

EBENEZER KING'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy :

The undersigned presents one firkin of butter made in the month of June, containing thirty nine pounds and three quarters ; also one pot butter made two weeks since, 14 lbs; and one box containing seven lbs. of butter made during the last week, from the produce of one cow. The cow has given at a milking twenty six pounds ; her feed has been principally ordinary pasture ; occasionally she has had three pints of corn meal per day. Her milk has set twenty four hours, when the cream has been separated ; has been churned once a week, the buttermilk pressed out, and the butter kept in a strong pickle.

EBENEZER KING.

Danvers, Sept. 28, 1836.

The cow is exhibited in the Society's pen.

AMOS KING'S STATEMENT

To the Committee of the Essex Agricultural Society on the Dairy :

GENTLEMEN — The firkin marked A. K. contains sixty pounds of butter made in June, from milk produced in one week by six cows and four three years old heifers. They brought their calves as follows: One heifer in Oct. 1835 ; one cow in Nov. 1835 ; three cows in Feb. 1836 ; one cow and two heifers in March ; and one cow and one heifer in April ; and will come in early next season. They have had common pasture feed

only, and have produced seven hundred and seventy pounds of butter since the 20th of May, besides six quarts of milk consumed daily in the family. The milk stood in tin pans thirty six hours; the cream was then separated and placed in earthen pots in a cool cellar. After the butter comes, it is taken from the churn and double the quantity of salt that is common for immediate use, put to it. It is then put into the firkin, without pressing out the buttermilk, and put into the cellar. This has been my method of laying down butter for many years, and has always proved a perfect preservative.

Respectfully submitted by

AMOS KING.

Danvers, Sept. 28, 1836.

N.B. The box marked A. K. contains eleven pounds of butter made this week, from milk produced by the same cows, and is a fair sample of the butter made during the season.

AMOS KING.

DANIEL P. KING'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

GENTLEMEN — The stone jar marked Z, contains about thirty pounds of butter made in the last week of June, from the produce of six cows; they had common pasture feed only; the milk stood in tin pans in a cool cellar thirty six hours: the cream was then separated and placed in pots on the cellar floor — in warm weather fine salt is stirred into the cream to prevent its souring. When the butter is taken from the churn, the buttermilk is pressed out, it is partially salted and remains in the cellar till the next day, when more salt is added, and it is again worked over; the quantity of salt used is about one ounce to the pound. The butter in the jar has been covered with a pickle made of rock salt, boiled and carefully skimmed.

Submitted respectfully, by

DANIEL P. KING.

Danvers, Sept. 28, 1836.

MATTHEW HOOPER'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy :

GENTLEMEN — I present for your examination a firkin of butter, containing about 70 pounds, made the present season by my wife, for our own use. We keep four cows, use from their milk what is necessary for a family of 8 or 10 persons, and the remainder is set for the purpose of making butter.

We have a cool room, constructed particularly for the purpose, in which our milk is set. When it is warm, we have an ice cellar, in which the cream is placed.

I am not aware that our mode of making butter differs from that usually practised. We are particular to have every thing neat about it, and to press out the buttermilk as fully as possible.

I also exhibit a few pounds of butter made in 1835, to show how butter may be preserved for more than a year. The article must speak for itself.

MATTHEW HOOPER.

Danvers, Sept. 28, 1836.

JACOB OSGOOD'S STATEMENT.

To the Committee on the Dairy :

GENTLEMEN — The cheese I present for your inspection, was made from the milk of four cows. Six cows gave milk, three of them all winter, the fourth in March, the fifth and sixth in April. We calculate that we use the milk of two cows in the family. Their winter feeding, meadow hay and corn fodder; in the spring some English hay, and in summer grass only.

Weight of new milk cheese made from the 9th of July to the 10th Sept. - -	435 lbs.
Weight of butter made from the 1st of June to the 9th of July, and seventeen days in Sept.	145 lbs.
Weight of six meal cheese made during the time of making butter, - - - -	294 lbs.

The process of making the Cheese. — A piece of rennet that

is one year old, three inches square, put into one gill of whey, twenty four hours previous to making the cheese, will turn twenty six gallons of milk to curd. The night's milk is strained into a brass kettle, and set in a tub of water over night. In the morning it is warmed and mixed with the morning's milk. Put the rennet into the milk, stir it well, let it remain one hour, or till the whey appears, then cut the curd with a knife that goes to the bottom of the tub, and the curd will gradually settle. Lade off the whey, and cut the curd when the whey is mostly extracted. One gallon or more of boiling whey may be turned upon it, and let it stand twenty minutes, then lade the whey and curd into a basket to drain ; cut it frequently, till there is no appearance of slip curd. It is chopped fine, and three gills of salt and one sixth of a tea-spoonful of saltpetre put into it. When pressed sufficiently, the cheeses are carried into a chamber, and are turned once a day — a little butter is necessary. In winter they are carried into the cellar, and rubbed and turned twice a week.

Respectfully yours,

JACOB OSGOOD.

Andover, Sept. 26th, 1836.

III. ON MILCH COWS.

The Committee on Milch Cows and Heifers have attended to the duty assigned them, and beg leave to submit the following Report —

The number exhibited to day, for premium and exhibition, was ten ; the weather being unfavorable, the number was smaller than was expected, but those that were exhibited were fine animals.

Knowing that we are dependant on this noble animal for so great a part of our support, and more especially the younger part of our race, it is surprising when we look around us and see so many of our farmers that are willing to keep those of an inferior quality, when it costs no more to keep those of the

first rate, that would yield a much greater profit. And what can we look at of more importance to our husbandmen than a good dairy? It would be well for them to examine more particularly on that point, and make a better selection of their cows; still we are proud to see that there has been a decided improvement in that part of our stock in this county, since this Society was first formed, and hope by proper encouragement it will stimulate our worthy friends to make still greater.

The committee were of opinion that Daniel Putnam, of Danvers, was entitled to the first premium of ten dollars, for his dark red cow, 9 years old.

That Eben'r King, of Danvers, was entitled to the second premium of seven dollars, for his brown cow, 6 years old.

That Eben'r G. Berry was entitled to the third premium of five dollars, for one of his light red twin cows, six years old.

That Jesse Sheldon, of Beverly, was entitled to the first premium of three dollars, for his dark red heifer, 2 years old.

That Edward Lander, of Danvers, was entitled to the second premium of two dollars, for his short horn heifer, 17 months old.

The two cows presented by Aaron C. Proctor, of Danvers, were fine, and in good condition.

The statements made by Daniel Putnam and Eben'r King are herewith presented: the committee think they are well worth publishing.

ANDREWS BREED,
DANIEL PUTNAM,
EZRA BATCHELDER,
HORACE WARE.

Danvers, Sept. 29, 1836.

DANIEL PUTNAM'S STATEMENT.

To the Committee of the Essex Agricultural Society on Milch Cows:

GENTLEMEN — I offer for your inspection, a milch cow which I have owned only since last January. I know nothing

of her history, excepting that she had been kept at Danvers Neck for a few years previously to my buying her. She is supposed to be of the native breed, and 9 or 10 years old.

This cow calved May 21. The calf was sold June 20th, for $7 62½ cts. During the 30 days that the calf sucked, there was made from her milk 17 lbs. of butter. From June 20th to Sept. 26th, (14 weeks) she gave 3370 lbs of milk, making a small fraction more than 34 lbs. and 6 oz. per day. The greatest quantity on any one day was 45 lbs, or 17 quarts and 1 pint, for the weight of a quart of her milk is 2 lbs. 9 oz. The greatest quantity in one week was 288 lbs.

The quantity of butter made in the same 14 weeks was 139 lbs. The greatest amount in one week was 12 lbs. 2 oz. The quality of her milk and butter is uncommonly good.

This cow has had good keeping. In addition to what she obtained in the pasture, she has frequently been fed with fresh mown grass and corn stalks. Also I have given her about 4 qts. of cob meal per day, through the summer.

Respectfully,

DANIEL PUTNAM.

Danvers, Sept. 28, 1836.

EBENEZER KING'S STATEMENT.

To the Committee of the Essex Agricultural Society on Milch Cows

The undersigned presents for premium his brown cow, seven years old : for exhibition only, he presents his red cow, six years old.

In the month of June, the red cow gave sometimes forty lbs. of milk per day — on an average thirty five lbs. In the month of July she gave on an average twenty eight lbs., and her product through the season has been good. In June, from her milk were made 39¾ lbs. butter ; in July, 29¼ lbs., and during the last week, seven lbs. Her feed has been principally in a poor pasture ; occasionally she has had three pints of corn meal per

day. The cow brought two large male calves, which she suckled till they were four weeks old, when they were sold for about twelve dollars.

EBEN'R KING.

Danvers, Sept. 28, 1836.

IV. ON DOMESTIC MANUFACTURES.

The Committee of the Essex Agricultural Society on Domestic Manufactures, REPORT —

That in the short time allowed them for examining so many articles, they have not been able to give satisfaction even to themselves; they can hardly hope that they have done full justice to the numerous competitors. They ask leave to recommend the following premiums and gratuities:—

To Mrs. Hannah Berry, of Danvers, for the best specimen of carpeting, the first premium, - - $ 5
To Mrs. T. Searl, of Danvers, for stair carpeting, a gratuity, 2
To Mrs. Mehitable S. Tuck, of Beverly, for the best hearth rug, premium, - - - 3
To Susan Lovett, of Beverly, for the next best hearth rug, 2
To Miss C. Ward, of Salem, for three superior hearth rugs, gratuity, - - - - 3
To Mrs. Hannah E. Cleaves, of Beverly, for a handsome hearth rug, gratuity, - - - 2
To Mary O. Locke, of Andover, - - - 1
To Mrs. Rhodes, of Salem, - - - 1
To Mrs. N. O. Robbins, of Salem, - - 1
To Mrs. C. Derby, of Danvers, - - 1

gratuities to each, for very fine hearth rugs;—besides these there were handsome and durable rugs by six other ladies, well deserving notice.

To Mrs. Hannah Jacobs, of Danvers, for 40 yards good frocking, a gratuity, - - - 2

To Abigail F. Barker, of Andover, for 4 pair hose, the second premium, - - - - 1
To Mrs. Andrew Munroe, of Danvers, (aged 84 years) half hose, premium, - - - - 1
To Mrs. Mary Towne, of Danvers, (aged 96 years) 2 pair hose, gratuity, - - - - 1
To Miss Marcia Foster, of Danvers, for 3 pair children's hose, gratuity, - - - - 1
To Mrs. Asa Abbot, of Andover, for 4 pair hose, gratuity, 1
To Mrs. Andrew Munroe, of Danvers, 12 pair mittens, a gratuity, - - - - - 1
To Mrs. Hannah Carleton, of Andover, for linen diaper, a premium, - - - - 2
To Miss Lucy Southwick, of Danvers, for linen diaper, a gratuity, - - - - - 1
To Mrs. Polly Merrill, of Salem, for the best counterpane, first premium, - - - - 4
To Elizabeth Hawkes, of Danvers, for counterpane, second premium, - - - - - 2
To Miss Elizabeth Newhall, of Lynnfield, for counterpane, a gratuity, - - - - - 1
To Mrs. Elizabeth K. Merrill, of Salem, for counterpane, gratuity, - - - - - 1
To Harriet E. Walker, of Danvers, a counterpane, 1
To Mrs. Emma P. Kettelle, of Danvers, a counterpane, gratuity, - - - - - 1
Besides these, there were several handsome articles of the kind.
To Mary F. Bagley, of Amesbury, for the best specimen of wrought lace, premium, - - - 3
To Emeline Bagley, of Amesbury, specimen of wrought lace, 2
To Harriet E. Walker, of Danvers, for the best specimen of work by a child under 12 years, - - 3
To Sarah Little, of Newburyport, 5½ years, old, 2d prem. 2
To Elizabeth Upton, of Danvers, - - - 1
To Elizabeth Sewall, of Danvers, - - 1
gratuities for work done by children. Many other specimens of beautiful work done by children were exhibited.

To Mrs. Asa A. Abbot, for net and trimmings of domestic silk, gratuity, - - - - 1
To Mrs. Trask, of Danvers, for shawl wrought of domestic silk, - - - - - 1
To Hannah Ann Draper, of Salem, for silk cocoons, a gratuity, - - - - - 1
To Sarah E. King, of Danvers, for do. - - 1
To Mary J. Draper, of Salem, for do. - - 1
To Sally Chadwick, of Danvers, for do. - 1
To Betsy B. Foster, of Beverly, for a beautiful bead bag, gratuity, - - - - - 1
To Lydia Ann Smith, Beverly, a handsome bead bag, gratuity, - - - - - 1
To Mrs. Sarah Newhall, of Lynn, (aged 90 years,) for 2 pair gloves, a gratuity, - - - 1
To Mrs. Abigail H. Hooper, of Danvers, (aged 72 years,) for 2 pair gloves, gratuity, - - - 1
To Mrs. Wardwell, of Andover, for handsome silk frame stockings, gratuity, - - - - 1
To Sarah Ives, of Beverly, for net work cap, a gratuity, 1
To Eliza B. Osborn, of Danvers, for rug work, a gratuity, 1
To Mrs. Cheever, of Hamilton, beautiful lamp stand, 1
To Mary A. Putnam, of Danvers, for rug work, gratuity, 1
To Hannah J. Putnam of Danvers, for do., gratuity, 1
To Caleb Pierce, of Salem, sheep skin mats, - 1
To Julia Elizabeth Draper, of Salem, for sheep skin mat, 1
To Phebe Felton, of Danvers, for wrought crickets, gratuity, 1
To Sarah A. Felton, of Danvers, for do. - - 1
To Sarah Ives, of Beverly, for net work, a gratuity, 1
To Rebecca King, of Danvers, for a wrought cricket, a gratuity, - - - - - 1
To Francis Scott, of Salem, for handsome drawers, and other articles, a gratuity, - - - 1
To Jeremiah Putnam, Jr., of Danvers, binding and lining skins, gratuity, - - - - 4
To W. & M. Black, of Danvers, lining skins and goat skin morocco, a gratuity, - - - 2

To Pool & Jacobs, of Danvers, sciver skins, very fine, 1
To Thomas Trask, of Danvers, very handsome chaise harness, gratuity, - - - - 2
To John Radford, of Salem, for some very neat boots, a gratuity, - - - - - 1
To George Newcomb, of Salem, for a very beautiful model, in brass, of a steam engine, a gratuity, - 2
To F. A. Tufts, of Danvers, for substantial leather mittens, a gratuity, - - - - - 1

Very good boots were exhibited by Mr. Henderson, of Salem, and shoes by Mr. Janes, of the same place.

Very handsome candles, and other mouldings in spermaceti, were exhibited from Col. Peabody's factory, in South Salem.

The committee were highly gratified with the appearance of many articles beautifully printed by the Lynn Printing Company; in elegance of figure and brilliancy of colors, they equalled any imported articles of the same description.

The committee were invited to visit the Fair held this day, by the ladies of a benevolent association, and were much gratified by the tasteful appearance of their hall, and the rich display of fancy and useful articles.

For the Committee,

DANIEL P. KING.

Danvers, Sept. 28, 1836.

V. ON CIDER.

The committee to examine the cider presented for premium, REPORT —

That but two barrels were exhibited:

One by Asa A. & Sylvester Abbot, of Andover;

One by Moses French, of Salisbury.

These were of good quality. The statements of the claimants are annexed to this report.

We recommend that the premiums be awarded as follows:

To A. & S. Abbott, of Andover, 1st premium, $ 15

To Moses French, of Salisbury, 2d premium, 8

JOSEPH KITTREDGE,
ANDREW DODGE,
JAMES MARSH,
} *Committee.*

Sept. 28, 1836.

A. A. & S. ABBOT'S STATEMENT.

To the Committee of the Essex Agricultural Society on Cider:

GENTLEMEN — The cider we offer for your inspection, was made in Nov., 1835, in the following manner:

We picked our apples in Sept. and Oct.; housed and kept them till they were mellow, (but not rotten); they were then ground, (Nov. 14th,) and the pomace was left in the trough thirty six hours, (till Nov. 16th,) when it was laid on the press and pressed moderately, the cider put up in barrels, placed in the cellar, and allowed to ferment freely. The barrels were filled up two or three times during the fermentation.

After it had stood about three weeks, (Dec. 12th,) it was drawn off and put up in clean barrels, and a small piece of unslacked lime put into each barrel. It was then stopped tight, and left in that situation till spring.

In April (9th) it was removed to a cooler place in the cellar, and a small piece of unslacked lime put into each barrel. It was then stopped tight, and the barrels were closely covered with boards and straw, and left in that situation till wanted for use.

The barrel offered for a premium was drawn off this day, (Sept. 27th.)

When making the cider now offered for inspection, the press was rinsed before the pomace was laid on it, and particular care taken to keep it clean during the process of pressing.

We are convinced by experience that to make good cider, particular attention should be paid to keeping the press clean; and the process of pressing cannot be hurried without injury to the cider.

Cider made when the weather is clear and the wind north-west, is generally of superior quality to that made when the wind and weather are in a different state.

To keep cider from turning to vinegar, we usually put a piece of unslacked lime, about the size of a hen's egg, into each barrel, about the time the fermentation is over.

Respectfully submitted,

ASA A. & SYLVESTER ABBOT.

Andover, Sept. 27th, 1836.

MOSES FRENCH'S STATEMENT.

To the Committee of the Essex Agricultural Society on Cider :

GENTLEMEN — I offer you a barrel of cider for premium. It was made of refuse russet and other winter apples, gathered in October, clean from leaves and filth, and housed in rather an open, airy building. They were ground the last of November, and lay in the trough one night; the next day pressed and put into barrels. The cider was put in the cellar, and when the fermentation subsided the bungs were put in. Some time in February, when the weather was cold, I drew it off, rinsed the barrels, and put it in again — nothing more was done. It is without any mixture. I have not failed, for more than six years, of having cider equal or superior to this, with no other trouble than is here stated.

MOSES FRENCH.

Salisbury, Sept. 28, 1836.

VI. ON PLOUGHING — DOUBLE TEAMS.

The committee on Ploughing with Double Teams, beg leave to REPORT —

That there were five teams entered for premium ; the ground was rather a favorable spot, had it not been for its extreme dryness. The lot assigned to each team was about one eighth of

an acre. The work was done with expedition, and, in the opinion of your committee, done well, except in one instance the depth was not quite equal to the requirement, viz. seven inches. After mature deliberation, your committee have come to the following conclusion :

That the work performed by the team belonging to William Foster, 3d, of Andover, Wm. Foster, 3d, teamster, and J. W. Winslow, ploughman, is entitled to the first premium of $12.

That the work performed by the team belonging to Perley Tapley, of Danvers, Peter Russell, teamster, W. Wood, ploughman, is entitled to the second premium of $10.

That the work performed by the team owned by Samuel Kilham, jr., of Danvers, Samuel Kilham, jr., ploughman, and D. Putnam, teamster, is entitled to the third premium of $8.

That the work performed by the team owned by Matthew Putnam, of Danvers, Matthew Putnam, ploughman, and Joseph Putnam, teamster, is entitled to the fourth premium of $6.

All the ploughs were of Pike's improved kind.

Respectfully submitted,

AMOS SHELDEN,
JESSE PUTNAM,
DANIEL FULLER,
ERASTUS WARE.

Sept. 28, 1836.

VII. ON PLOUGHING — SINGLE TEAMS.

The committee on Ploughing with Single Teams, REPORT — That there were six teams entered, each of which ploughed about one eighth of an acre of ground. The work was well done, the teams were well trained, and the whole performance was highly satisfactory.

Where all did well, it is not easy to say which did best ; but

upon careful examination, your committee recommend that the premiums be awarded as follows, viz :

To Perley Tapley, of Danvers,	1st prem.	$10.
To Jed. H. Barker, of Andover,	2d "	8.
To John Foster, of "	3d "	6.
To Joseph Kittredge, of "	4th "	4.

Respectfully submitted,

R. A. MERRIAM,
EBEN'R KING,
NATHAN PEARSON,
JESSE SHELDON,
RUFUS WYMAN,
Committee.

Sept. 28, 1836.

VIII. ON BULLS.

The committee to examine the Bulls entered for premium, REPORT —

That but four animals of this description were exhibited, viz :

One by Jesse Putnam, of Danvers, 3 years old.
" Aaron C. Proctor, " 4 "
" Horace Ware, of Salem, 4 "
" Jesse Sheldon, of Beverly, 3 "

All these were of good quality. We recommend that the premiums be awarded as follows, viz :

To Jesse Shelden,	1st prem. -	$10
To Aaron C. Proctor,	2d "	5

Respectfully submitted,

SAM'L BRADSTREET,
DANIEL FULLER,
WM. W. LITTLE,
Committee.

Sept. 28, 1836.

IX. ON WORKING OXEN.

The committee on Working Oxen, REPORT — That there were entered for these premiums,

1 pair by John Foster, of Andover.
1 pair by Wm. Foster, 3d, "
1 pair by Moses Pettingill, of Topsfield.
3 pair by Perley Tapley, of Danvers.
1 pair by Nathan Pearson, "
1 pair by Jed. H. Barker, of Andover.
1 pair by Matthew Putnam, of Danvers.
2 pair by Isaac Osgood, of Andover.
1 pair by Joseph Kittredge, "

All these cattle were good — many of them of the first class. Each pair was particularly examined, as to their power in the yoke, and the manner in which they had been trained. The committee recommend that the premiums be awarded as follows, viz :

To Jed. H. Barker,	1st prem.	$10.
To Perley Tapley,	2d "	7.
To John Foster,	3d "	5.

Per order of the Committee,

ASA TAPLEY, *Chairman.*

Sept. 28, 1836.

X. ON STEERS AND CALVES.

The committee on Steers and Calves exhibited for premium, REPORT —

That Jedediah H. Barker, of Andover, is entitled to the first premium of $7, for his red 3 year old steers.

That Joel Richardson, of Andover, is entitled to the second premium of $5 for his brindled 3 year old steers.

That said Richardson is entitled to the first premium of $6, for his superior pair of 2 year old steers.

That Wm. Foster, 3d, of Andover, is entitled to the first and

second premiums of $4 and $2, for his two pair of 2 year old steers.

That Samuel Taylor, of Danvers, is entitled to the premium of $3, for his twin steer calves.

Respectfully submitted,

MATTHEW COX, } *Committee.*
MOSES FRENCH, }

Sept. 28, 1836.

XI. ON FRUITS AND FLOWERS.

The committee on Fruits and Flowers REPORT — That there was but little exhibited, and that little in more productive seasons, would not have been deemed extraordinary.

They recommend the following gratuities :

To Daniel Buxton, jr., for the French sugar beets, and onions,	$1 00
Benj. Goodridge, crook necked squashes, and onions,	1 00
Kendall Osborn, best autumnal, marrow squashes,	1 00
D. Taylor, for a specimen of a large lot of African squashes, raised by him this year,	1 00
Moses Black, for the Plelermy squash,	1 00
John F. Allen, beautiful bouqets of flowers,	1 00
James Green, do. do.	1 00
Isaac Dempsy, pound sugar pears,	50
Benj. B. Tippits, mammoth pippins,	50
John Jacobs, peaches,	50
Edward Lander, apples, pears, &c.	1 00

Respectfully submitted,

ANDREW NICHOLS, *per order.*

Sept. 28, 1836.

XII. ON HORSES.

The Committee on Horses have attended to the duty assigned them, and ask leave to submit the following REPORT —

The number of horses offered for premium was four. One colt, two years old, was also offered, but not for a premium, as his age was not such as to bring him within the rules of the Society. This was a very fine animal. With respect to the other four, although two of them were good, and one very promising, yet the Committee, after a full examination, and a desire to do all, that might be justified, to encourage the raising of horses, have been reluctantly brought to the unanimous opinion, that the best interests of the Society did not require that any premium should be awarded. And they were led to this result, rather by general reasons of expediency, and a regard for the best interests as well of the Society as of applicants themselves, than by any opinion unfavourable to the particular animals offered. The Committee did not think that the applicants brought themselves so within the rules established by the Society as to make it expedient or proper to recommend that a premium should be awarded to either of them.

HUBBARD EMERSON,
CALEB LOWE,
J. B. WINCHESTER,
N. J. LORD,
} *Committee.*

Danvers, Sept. 28, 1836.

IMPROVING FRUIT TREES.

Among the illustrious benefactors of mankind, the name of Van Mons* seems destined to hold a conspicuous place. By almost incredible labor, perseverance, and constancy of purpose, through a long succession of years, he seems to have established a philosophical theory of improving or ameliorating fruit trees and other productions of nature, worthy of a place by the side of the wonderful discoveries and improvements in other branches of philosophy which characterize the age of Herschel, Sir Humphrey Davy, Cuvier, and a host of other distinguished contemporaries,—

"Whose names must honored live, till science dies."

From a long article in the Horticultural Register and Gardener's Magazine of June, 1836, — communicated by Hon. H. A. S. Dearborn, — we have compiled the following, which we think cannot fail of being interesting to a large portion of the members of the Essex Agricultural Society. A. N.

VAN MONS'S THEORY

Of ameliorating or improving Fruit Trees, by raising successive generations from seed.

So long as plants or trees remain in their natural situation, their seed always produce the same; but on changing their climate and territory some will vary more or less, and when they have once departed from their natural state, they never again return to it, but are removed more and more by successive generations.

The seed, for example, of the wild pear trees, in their native region, always reproduce their like at every age; that is, be the tree twenty or a thousand years old at the time the seed is taken from it, the fruit of its offspring trees will be precisely like that of the parent stock. But the seed of a domesticated pear

* Professor of Chemistry at the University of Louvain, Belgium.

tree, that is, a tree which produces better, or at least a different kind of fruit from its wild ancestors, produces trees not only very different from itself and them, but this difference will be greater if the seed be taken from the young seedling's first or early fructification, than it will be if taken from the same tree after it has been many years in bearing.

To improve or ameliorate fruit trees, therefore, as expeditiously as possible, young seedlings should be forced into bearing as early as may be, and the seed first produced planted. Pursuing this method, Van Mons, notwithstanding the seed that he was obliged to use in his first experiments were obtained from ancient varieties, whose age, although uncertain, was much advanced, was enabled to reach, in forty two years, the fruit of the fifth generation of his pear trees, all of which was good and excellent. His first generation yielded their first fruit in from twelve to fifteen years, his second in from ten to twelve years, his third in from eight to ten years, his fourth in from six to eight years, and his fifth in six years, and in the eighth generation he obtained a few pear trees which fructified at the age of four years. He also found that three or four generations without interruption, from parent to son, and from twelve to fifteen consecutive years, were sufficient to obtain no other than excellent fruit from the stones of peaches, apricots, plums and cherries;—that to obtain none other than good apples, only four generations, and about twenty years, were required.

Such, briefly, according to Van Mons, is the philosophy of improving fruit trees. But why, it may be asked, if fruit trees are capable of such rapid improvement, by reproduction from seed, do so few seedling trees among us produce good fruit? From the theory of Van Mons may be obtained a philosophic answer to this inquiry. Trees, like all other organized beings, have limited periods of youthful growth, maturity, and decay. Trees propagated by cuttings, scions, &c., are only the multiplication of individuals, and subject to the same great law of nature. Their age, however late they may have commenced an independent existence, must be considered the same as that of the parent stock, and when the full period of the natural life of

the original tree shall have been completed, will cease to exist. Age alone, according to Van Mons, causes our fruit trees to deteriorate, and their seeds to degenerate. Seed, he says, which are yielded by the hundredth fructification of a domesticated pear of excellent quality, produce a great variety of trees, whose fruits, almost always detestable, are more or less near to a wild state. Seedling trees, with us, have generally been the offspring of old varieties; hence they have seldom produced good fruit. Whoever, therefore, may possess young seedlings which produce good fruit, would confer a great favor on the community by preserving the seed for planting. It has been ascertained that it is advantageous to collect the fruit a little before it is ripe, and leave it to become perfectly mellow and reach a state of decay, before extracting the seeds or stones for planting. The apple is said to deteriorate less rapidly, and to live longer than the pear.

The subject of deterioration naturally leads us to inquire how many years a variety of pear may live. Van Mons estimates that it may live from two to three hundred years. But I have remarked, he says, that the most excellent, beyond all others, least resist the ravages of old age. They cannot attain the age of half a century, without manifesting symptoms of decrepitude. The first of these symptoms is that of bearing less constantly and the fruit ripening later. The decay of the wood, and the loss of the beautiful form of the tree, and the alteration of the fruit, follow at much later periods. The varieties that have existed but half a century, do not suffer from canker at the ends of the branches, nor from diseases of the bark; the fruit does not crack, nor is it filled with a hard substance, covered with knots, nor insipid or dry. These varieties can still be grafted on other trees, without their infirmities being augmented. It requires half a century more to render them worthless. It is painful to think that soon the St. Germain, the Beurre Gris, the Crassanne, the Colmar, and the St. Michæls, must submit to this destruction. None of these varieties succeed any longer in Belgium, except when engrafted on a thorn, and as espaliers, trained against a wall; but this success is at the expense of their commendable qualities.

Van Mons does not attribute the deterioration of fruit trees to their multiplication by repeated ingrafting, but contends that natural and grafted trees deteriorate in the same manner and with the same rapidity, in consequence merely of their age. He discovered in an old garden of the Capuchines, the parent tree of the Bergamote de la Pentacote, an old pear. All the trees grafted from it are affected with canker, in slightly moist land, and the fruit is small, cracks when growing in the open air, is covered with black spots, which communicate a bitter taste, and no longer succeeds, but when trained as an espalier along a wall. The parent tree was infected with all the evils found in those grafted from the same variety. He took suckers from the roots and scions at the same time, which he grafted on other stocks, and the trees produced by both were deteriorated in the same degree and manner as those which have been for a long time multiplied by the graft. Poiteau, the admirer and panegyrist of Van Mons, thinks, however, that this rapid deterioration of fruit trees may be somewhat delayed if scions be always taken from the most healthy individuals and inserted only into vigorous stocks.

Van Mons's method of raising fruit trees from the seed was as follows. He left the plants in the seed bed two years; he then took them up, preserved and transplanted only the most vigorous, at such a distance one from the other that they could thoroughly develope themselves and fructify. He planted them about ten feet apart, sufficiently near to force them to run up tall and form pyramidal tops, which he states hastens their fructification. While waiting for his trees to produce fruit, he studied their form and physiognomy, and from long continued observations established the following prognostics of what they may become, from their different exterior characteristics.

1. *Prognostics of a favourable augury.* — A good form, a smooth and slightly shining bark, a regular distribution of the branches in proportion to the height of the tree; annual shoots bent, striated, a little twisted, and breaking clear without splinters, thorns long and garnished with eyes or buds nearly their whole length; eyes or buds plump, not divergent red or grizzled;

leaves smooth, of a mean size, crimped on the side of the middle nerve, borne on petioles (the stem of the leaf) rather long than short, the youngest in the spring remaining a long time directly against the bud, the others expanded, hollowed into a gutter from the bottom towards the top, but not their whole length.

2. *Bad prognostics.* — Branches and twigs confused, protruding like those of the hornbeam, thorns short without eyes; leaves averted from the bud, from their first appearing small round, terminating in a short point, guttered their whole length. These characteristics indicate small fruit, sweet, dry and late, fit only for baking.

3. *Prognostics of early fruit.* — Wood large, short; buds large and near.

4. *Prognostics of late fruit.* — Wood slim, branches well distributed, pendant, the shoots a little knotted, generally denote late delicious fruit; with leaves round, point short, stiff, of a deep green, borne on petioles of mean length, are analogous signs, but less sure.

Van Mons remarks, that among the new pears which he has obtained, there are some which were several years in taking a fixed form; that several did not assume one for from twelve to fifteen years, and that others never did. Our old varieties, without doubt, have been in the same situation, and he gives as an example of pears that have never assumed a determinate form, our Bon Cretien de Hiver. Still it is most easily recognized, notwithstanding the variation in its form and size.

FUNDS OF THE SOCIETY.

The Committee appointed to examine the accounts of the Treasurer, have attended to that service, and ask leave to REPORT —

The funds of the Essex Agricultural Society, two years since, as per statement for January 1, 1835, were $6025 92

Income for 1835, *received by the Treasurer.*

State Bounty, - - -	600 00	
Bank Dividends, - - -	243 25	
Interest on Notes of Hand, - -	47 00	
Admission of 16 members, -	48 00	
Interest on deposites, - -	15 03	
Total income for 1835,		$953 28

Expenses paid in 1835.

Premiums awarded, - -	327 20	
Foote & Chisholm's bill, - -	153 80	
Salary of Secretary, for 1834 and 1835,	100 00	
Other bills paid, - - -	72 52	
Total expenses paid, 1835,		$653 52
Balance of income over expenses, - -		$299 76

Income of 1836.

State Bounty, - - - -	600 00	
Bank Stock Dividends, - -	275 50	
Interest at Savings Bank, 2 years,	54 02	
Interest on deposites in Warren Bank,	39 85	
Interest on Notes of Individuals,	48 77	
Admission of members, - -	6 00	
Total income for 1836,		$1023 54

Expenses paid in 1836.

Paid premiums, - - -	332 00	
Foote & Chisholm's bill, -	129 85	
Other bills, - - - -	38 58	
Total expenses paid 1836,		$497 43
Excess of income over expenses, in 1836,		$526 11

Amount of funds, January 1, 1835,	$6025 92	
Balance of income over expenses, in 1835,	299 76	
Do. do. do. in 1886,	526 11	
	$6851 79	

Funds of the Society, Dec. 28, 1836.

Warren Bank,	19 shares, - -	$1900 00
Commercial Bank,	11 " - - -	733 33
Merchants Bank,	6 " - -	600 00
Exchange Bank,	12 " - - -	800 00
Salem Bank,	3 " - -	300 00
Mercantile Bank,	7 " - - -	700 00
Village Bank,	5 " - -	500 00
Amount in Institution for Savings, - - -		670 14
Notes of J. Shove and B. Goodridge, - -		318 59
Do. of same, - - - -		96 78
Note of Ch. Derby, - - - -		25 75
Cash on hand, deposited in Warren Bank, on interest,		205 20
Total,		$6849 79
Deduct error in balance of acc't, 1835,	$ 7 00	
Paid since examination, and before January 1, 1837,	25 50	32 50
Balance,		$6817 29

The funds, it is believed, are perfectly safe, and well invested.

It is proper to observe that the payments in each year comprise a part of the claims that accrued the preceding year, and were due at the close of it. Thus in January, 1835,

The funds are stated at - - -	$6025 92
Claims then due, and paid in 1835, - -	349 21
Balance, after payment of debts, -	$5676 71

So in 1836, the payments include due the preceding year, - - - - - - - - - $269 43

So that the amount of funds, at the close of 1835, after deducting all debts then due, was - - $5975 47

The Treasurer will be able to estimate the amount of outstanding debts against the Society at this time. If they should amount to about $350, the funds of the Society, after the payment of all debts, would be about $6500 at the close of the year.

Satisfactory vouchers were presented by the Treasurer for all expenditures.

Respectfully submitted,

F. HOWES, }
D. P. KING, } *Committee.*

Salem, Dec. 28, 1836.

Dr. *Essex Agr. Society in acc't with A. Nichols, Treas.* ***Cr.***

1836.		1836.	
P'd premiums aw'd 1835	$104 00	Jan. 1. Bal. in ac't stated	$ 855 76
Do. do. 1836	253 50	On Notes, (principal)	400 00
Bills contracted in 1835	140 43	Do. (interest)	67 24
Do. do. 1836	25 00	Bank Dividends	275 50
6 new shares, Warren Bank	600 00	Interest on dep. in Warren Bank	39 25
5 do. Village Bank	500 00	New Members	6 00
Error in balance, Jan. 1836	7 00	1837. Jan. 1. State Bounty	600 00
Shove, Goodridge, and Derby Notes	441 12		
	$ 2071 05		$ 2243 75
Cash to balance	172 70		
	$ 2243 75		

E. E. ANDREW NICHOLS, *Treasurer.*

HARVEST HYMN,

Written by Alonzo Lewis, Esq., and sung at the Annual Meeting of the Society, 1836.

When nature slept in dark repose,
And naught was seen, or felt or known,
In might the great Creator rose,
And light and love through chaos shone.
Then earth was formed in beauty fair,
And verdure clothed each fertile mound,
But all was wild and useless there,
And not a man to till the ground.

When all things slept in chaos, there was no vegetation; and after it was formed, it was uncultivated and useless.

'Twas then the first of human race
From his primeval silence sprang;
He stood in majesty and grace,
When morning stars together sang.
Go—said the Word—my purpose aid,
Thine all the realms beneath the sun;
For thee each plant, each fruit was made;
Complete the plan by me begun.

Man received a command from God to continue the work he had begun,—by tilling the earth,—that it might yield its award.

Man heard—obeyed—and lo, the earth,
Beneath his hand new beauty wears.
Each plant assumes a second birth,
Each tree a greener foliage bears.
As if to him Creative power
From God's productive hand were given,
New fruits are formed with varied flower,
And richer beauty blooms to heaven!

In obedience to that command, man cultivates the earth, renders it productive, and even produces new varieties of fruit.

Where once a desert forest lay,
Fair fields and graceful gardens shine;
The conquered wastes their tribute pay,
And thus fulfil the will divine.
Then let our hearts, like fertile soil,
To heaven their fruit in season send,
To Him who bade the Farmer toil,
To Him who is the Farmer's friend.

The wilderness being subdued and converted into fields and gardens, for the support of man, shows that the divine command is fulfilled,—which furnishes a theme for gratitude.

PREMIUMS OFFERED

BY

THE ESSEX AGRICULTURAL SOCIETY,

1837.

I. MANAGEMENT OF FARMS.

For improvements and skill, in the management of a farm, taking into view the lands, stock, produce, &c., with all its appendages:

The best,	thirty dollars.
The second,	twenty-five dollars.
The third,	twenty dollars.
The fourth,	fifteen dollars.

REMARKS.

Notice of intention to claim these premiums, must be given to the Secretary, or the Chairman of the Committee, on or before the 20th of June, the present year.

The Committee will examine the farms that may be entered, about the 1st of July and the 1st of September.

An accurate description of the farm, and statement of the crops and produce, &c., will be required to be furnished by the claimants to the Secretary, previous to the 1st of December.

Farmers will bear in mind that these premiums are not offered for the largest number of acres, or to the wealthiest owner,

but to him who improves in the best manner what he has, whether it be *one* or *ten*, and offers the best example for imitation.

The Committee to view, the present year, are

JOSEPH KITTREDGE, *of Andover.*
ELIPHALET EMERY, *of West Newbury.*
DANIEL PUTNAM, *of Danvers.*
STEPHEN BARKER, *of Andover.*
AMOS SHELDON, *of Beverly.*
THOMAS WEST, 2D, *of Haverhill.*
JOHN W. PROCTOR, *of Danvers.*

II. DAIRY.

1. For the best butter produced on any farm within the county, from the 1st of June to the 9th of July, inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibited, with a particular statement of the method of making and preserving the same, ten dollars.

For the second best, seven dollars.
For the third best, five dollars.
For the fourth best, four dollars.

2. For the best produce of butter, on any farm within the county, in the four months next following the twentieth of May, the present year — a sample of not less than twenty-five pounds of this butter so be exhibited at the anniversary of the Society — *quality*, as well as *quantity*, to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, twelve dollars.

For the second best, eight dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county, in the months of *June*, *July*, *August* and *September*, in the present year, a sample of which, not less than fifty pounds, to be exhibited, ten dollars.

For the second best, eight dollars.

REMARKS.

To induce our farmers to bring forward their samples of *butter* and *cheese*, for exhibition and premium, it is proposed to give them an opportunity to sell at auction on the day of the exhibition. An auctioneer will be procured for this purpose. If the articles exhibited should be of superior quality, without doubt there will be those present who will cheerfully pay a generous price.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as a manure, on not less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.

For the second best, ten dollars.

IV. FOREST TREES.

For the best plantation of *White Oak Trees*, raised from the seed, not less than one acre, nor less than one thousand trees, in the third year's growth, twenty dollars.

For the second best do. fifteen dollars

For the third best do. ten dollars.

For the best plantation of *Locust Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Larch Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *White Ash Trees*, with the same conditions, twenty dollars.

For the second best do. fifteen dollars.

For the third best do. ten dollars.

For the best plantation of *Maple Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

For the best plantation of *Walnut Trees*, with the same conditions, twenty dollars.
For the second best do. fifteen dollars.
For the third best do. ten dollars.

REMARKS.

Notice of intention to claim any of these premiums, must be given to the Secretary by the 15th of June. The Committee to examine the plantations are

JAMES H. DUNCAN, *of Haverhill.*
ANDREW NICHOLS, *of Danvers.*
GARDNER B. PERRY, *of Bradford.*
PICKERING DODGE, *of Salem.*
NATHAN WEBSTER, *of Haverhill.*

V. CULTIVATION OF MULBERRY TREES, SILK, &c.

1. For the best plantation of White Mulberry Trees, not less than half an acre, twenty-five dollars.
2. For the second best, twenty dollars.
3. For the best nursery of White Mulberry Trees, not exceeding two years' growth, twenty dollars.
4. For the second best, fifteen dollars.

☞ The foregoing were offered the last year, to be paid the present year.

5. For the best silk, produced and reeled within the county, amounting at least to one pound, seven dollars.
6. For the second best, five dollars.
7. For the most valuable parcel of silk, produced by the enterprise of one family, the present year, and exhibited either in cocoons, reeled, or manufactured, seven dollars.

☞ The same parcel not to be entitled to more than one premium.

9. To the person who shall be found in the autumn of 1838 to have improved or increased his present means of prosecuting the culture of silk to the greatest extent, and upon the most economical and practical plan, within this county,

twenty dollars.

10. To the second greatest extent, fifteen dollars.

11. To the person who shall fit up a building, room, or apartment, which, from its size, shape, fixtures, means of ventilation, &c., &c., shall be judged best calculated to secure the health and growth of the silk worm, afford the best convenience for feeding, cleaning the shelves or stands, and fixing the arches, &c. for the cocoons, and which, from its simplicity and economical structure, shall be such as may be generally adopted by those who may engage to a considerable extent in the silk culture, a premium of thirty dollars.

REMARKS.

All applications for the foregoing premiums must be accompanied with statements of the expense of time and money incurred, the whole management of the trees, worms, &c., the method of reeling and manufacture of the silk, and whatever may be necessary to enable the committee, and all concerned, to judge of the expediency of encouraging the farmers of the county generally to engage in the culture of silk, to estimate the benefits which may result to others from the knowledge of the experiments and practices of the claimants, in the prosecution of this new and interesting business.

It is the object of the Society to reward valuable improvements only, and consequently it will not feel bound to pay the premiums offered, unless something superior, more valuable, and better of its kind, is exhibited than those nurseries, plantations, and specimens of silk, &c., for which premiums have heretofore been given. On the other hand, gratuities will be given, should any valuable invention or improvement in the cultivation of the white or Chinese mulberry trees, the management of silk worms,

the manufacture of silk, or any thing calculated to promote the object in view, be exhibited, and for which no particular premiums are offered.

Applicants for the ninth and tenth premiums will bear in mind that it is for the amount of food for silk worms which their trees, in 1837, shall be adjudged capable of producing, more than their trees, if any they have, produced last year, (1836,) that these premiums are offered, and that a statement of the number and condition of their trees the present spring, certified by disinterested witnesses, will be required. These premiums are designed to effect two objects — the planting of new nurseries, and the improvement and preservation of nurseries and plantations for which premiums have been paid by this Society.

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, twelve dollars.

For the second best, eight dollars.

VII. IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in improving wet meadow or swamp lands, and bringing the same into a condition to produce a valuable crop — with a detailed statement of the means used, and the expenses, &c., &c., twenty dollars.

For the second best, ten dollars.

☞ These premiums will be paid whenever satisfactory claims shall be presented.

VIII. PLOUGHING.

I. DOUBLE TEAMS.

For the best performance in ploughing,	twelve dollars.
For the second,	ten dollars.
For the third,	eight dollars.
For the fourth,	six dollars.

II. SINGLE TEAMS.

For the best performance in ploughing,	ten dollars.
For the second,	eight dollars.
For the third,	six dollars.
For the fourth,	four dollars.

REMARKS.

Double teams will be required to plough not less than one sixth of an acre, and single teams not less than one eighth of an acre. Double teams not less than *seven* inches deep ; single teams not less than *five* inches deep. The ploughs must be of the best construction, the furrows truly cut, and well turned. The whole must be done in a workmanlike manner. So many premiums have already been awarded for ploughing, and so great have been the improvements in the construction of ploughs, that nothing less than the best of work will be satisfactory. Those who intend to be competitors in the ploughing match, must give notice to the Secretary, on or before the Monday previous to the exhibition. Persons residing more than ten miles from the place of exhibition, can have their teams, intended to be used in the field, fed at the expense of the Society, the night previous.

IX. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

X. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used, and the expense of raising the same; the experiment to be made in the three winter months, twenty dollars.

For the second best, fifteen dollars.

For the third best, ten dollars.

☞ These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for three years.

XI. FATTENING CATTLE OR SWINE UPON APPLES.

For the most satisfactory experiment in feeding cattle or swine upon apples, with a statement in detail of the process and the results, fifteen dollars.

For the second, ten dollars.

XII. CIDER.

For the best barrel of cider that shall be produced at the exhibition in 1837, made within the county, a premium of fifteen dollars.

For the second, eight dollars.

REMARKS.

If the cider offered is found worthy of the *first* premium, it will be taken to be used at the table, without any additional payment. The claimant must furnish the committee with a statement in writing, of the entire process of making and preserving the cider.

XIII. CULTIVATION OF WHEAT, RYE, OATS AND BARLEY.

For the best conducted experiment in the raising of wheat, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of rye, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of oats, on not less than one acre of land, ten dollars.

For the best conducted experiment in the raising of barley, on not less than one acre of land, ten dollars.

☞ A statement of the produce, the manner of preparing the ground, the kind of seed used, the manner of preparing the same, &c., &c., iecluding all the details in relation to the crop, will be required to be handed to the committee.

XIV. ANIMALS TO BE PRODUCED AT THE EXHIBITION, ON WEDNESDAY, SEPTEMBER 27, A.D. 1837.

[☞SEASONABLE NOTICE OF THE PLACE WILL BE GIVEN.☜]

For the best ox, fatted within the county, regard being had to the manner of feeding and the expense thereof, fifteen dollars.

For the second do. ten dollars.

For the third do. five dollars

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the county, at least nine months from the day of exhibition, ten dollars.

For the second best, five dollars.

For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk, and the manner in which she has been fed, ten dollars.

For the second do. seven dollars.

For the third do. five dollars.

For the best heifer, that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, seven dollars.

For the second do. five dollars.

For the best pair of working oxen, taking into view their size, power, and the manner in which they have been trained, ten dollars.

For the second do. seven dollars.

For the third do. five dollars.

For the best pair of 3 years old steers, do. seven dollars.

For the second do. five dollars.

For the best pair of 2 years old steers, do. six dollars.

For the second do. four dollars.

For the best pair of yearling steers, do. four dollars.

For the second do. two dollars.

For the best bull calf, 4 months old, three dollars.

For the second do. two dollars.

For the best pair of steers do. three dollars.

For the second do. two dollars.

For the best heifer do. three dollars.

For the second do. two dollars.

For the best boar, five dollars.

For the second do. two dollars.

For the best breeding sow, five dollars.

For the second do. three dollars.

For the best litter of weaned pigs, not less than *four*, from 2 to 6 months old, six dollars.

For the second do. three dollars.

XV. HORSES.

For the best horse raised in the county, not less than three nor more than five years old, ten dollars.

For the second do. eight dollars.

For the third do. six dollars.

For the fourth do. four dollars.

XVI. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.

For the second best do. do. three dollars.

For the best piece of stair carpeting, not less than twenty yards to be exhibited, three dollars.

For the best straw or grass bonnet, five dollars.

For the second best do. three dollars.

For the best wrought hearth rug, having regard both to the quality of the work and the expense of the material, three dollars.

For the second best do. two dollars.

For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, five dollars.

For the second best do. three dollars.

For the best piece of flannel, a yard wide, and twenty yards in quantity, four dollars.

For the second best do. do. two dollars.

For the best wrought woolen hose, not less than four pair, two dollars.

For the second best do. one dollar.

For the best men's half hose, not less than four pair, one dollar.

For the best silk hose, not less than three pair, two dollars.

For the best piece of linen cloth, not less than twenty yards, four dollars.

For the second best do. two dollars.

For the best piece of linen diaper, not less than twenty yards, three dollars.

For the second best do. two dollars.

For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.

For the second best do. two dollars.

For the best specimen of wrought lace, three dollars.

For the second best, two dollars.

For the best specimen of work, performed by a child

under twelve years of age, exhibiting industry and ingenuity, three dollars.

For the second best do. two dollars.

And should any other article of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

XVII. FRUITS AND FLOWERS.

A convenient room will be furnished for the exhibition of Fruits and Flowers, and a Committee will be appointed to examine and report upon the same. All who are interested in improving the horticulture of our county, are invited to lend their aid to this part of the exhibition, which it is hoped will be charming to the eye, and delicious to the taste.

GENERAL REMARKS.

All claims for premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his agent, on or before 9 o'clock, A.M. of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

Claims for premiums on farms must be entered with the Secretary on or before the 20th day of June, the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to increase the funds of the Society, and will not be paid after that time.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered; and *gives notice as required*, of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality*.

By order of the Trustees.

JANUARY 2D, 1837. Attest: J. W. PROCTOR, *Sec'y.*

NAMES OF NEW MEMBERS.

IN 1836.

JESSE SHELDON, *of Beverly.*
EDWARD S. DAVIS, *of Lynn.*
FITCH POOL, JR., *of Danvers.*
WARREN JACOBS, *of Danvers.*
AARON C. PROCTOR, *of Danvers.*

NOTE. Any citizen of the county, twenty-one years of age, can become a member of the Society, by paying to the Treasurer the sum of *three dollars.*

Gentlemen who are disposed to benefit the community in which they reside, will confer a favor, by exerting their influence in favor of this Society.

Young men are particularly invited to come forward and sustain an Institution, founded by their fathers, which has for its object the improvement of the noblest of arts — *the art of tilling the ground.*

OFFICERS OF THE SOCIETY.

Elected September 1836.

JAMES H. DUNCAN, *of Haverhill,* PRESIDENT.

HOBART CLARK, *of Andover,*
DAVID CUMMINS, *of Salem,*
SOLOMON LOW, *of Boxford,*
DANIEL ADAMS, 3D, *of Newbury,*
} VICE-PRESIDENTS.

ANDREW NICHOLS, *of Danvers,* TREASURER.
JOHN W. PROCTOR, *of Danvers,* SECRETARY.

TRUSTEES.

Stephen Barker, *of Andover.*
Andrews Breed, *of Lynn.*
Jeremiah Colman, *of Newburyport.*
Nathaniel Felton, *of Danvers.*
Daniel Fuller, *of Middleton.*
Moses French, *of Salisbury.*
Edward Ford, *of Beverly.*
Frederick Howes, *of Salem.*
Nathan W. Hazen, *of Andover.*
William Johnson, Jr., *of Andover.*
Joseph Kittredge, *of Andover.*
Amos Kimball, *of Boxford.*
Daniel P. King, *of Danvers.*
Jesse Kimball, *of Bradford.*
R. Augustus Merriam, *of Topsfield.*
Richard Jaques, *of Newbury.*
Moses Newell, *of W. Newbury.*
Daniel Putnam, *of Danvers.*
Jesse Putnam, *of Danvers.*
Dean Robinson, *of W. Newbury.*
Amos Sheldon, *of Beverly.*
Jeremiah Spofford, *of Bradford.*
Bowman Viles, *of Lynnfield.*
Erastus Ware, *of Marblehead.*

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TRANSACTIONS

OF THE

ESSEX

AGRICULTURAL SOCIETY,

FOR

1837.

VOL. II.—NO. VII.

PUBLISHED BY ORDER OF THE SOCIETY.

JANUARY, 1838.

SALEM GAZETTE PRESS.

1838.

AN

ADDRESS

BEFORE THE

ESSEX AGRICULTURAL SOCIETY,

AT TOPSFIELD, SEPTEMBER 27, 1837.

AT

THEIR ANNUAL CATTLE SHOW.

By NATHANIEL GAGE.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM:
PRINTED AT THE GAZETTE OFFICE.
1838.

ADDRESS.

Mr. President and Gentlemen,

On the return of an occasion full of interest not only to the cultivator of the soil, but to the true lover of his country, you have met together in the Temple of Devotion, for the expression of your grateful praise to the "God of the harvest"; and for the consideration of a topic second in importance to no object of mere earthly pursuit.

Let me confess, in the outset, what you, otherwise, would not fail to perceive, that I am incompetent to do justice to such an occasion. Though the son of an Essex farmer, devoted, in early life, to the pursuit of agriculture, it is now twenty years since I have been, practically, engaged, unless occasionally, in this healthful and happy occupation. Permit me, then, to express the hope that, as I cannot say what the occasion may justly demand, you will give your attention to some general remarks upon the importance and dignity of agriculture as a pursuit; upon some

improvements already made; upon the good influences to be anticipated from the diffusion of information.

That agriculture, which, by high authority, has been denominated less an art, than an admirable combination of the most important arts, has not received that degree of attention, amongst us, to which it is eminently entitled, is an assertion too obviously true to need the aid of argument in its support.

To promote the welfare of the great mass of the community, the proper degree of attention must be devoted to the various occupations, the results of which are necessary to the general comfort and subsistence. No people can depart, materially, for any length of time, from such a principle with impunity. When this balance is disturbed, by a secession of large numbers from one important pursuit to crowd into another, public as well as individual suffering must, ere long, ensue. And, especially, must such be the case, when the occupation from which the secession is made is, like agriculture, the great source of production—is to the nation at large, what the circulation of the blood is to the animal body. That such has, to some extent, been the tendency of late years, in New England, the careful observer must have seen. Perhaps this tendency is to be ascribed, in part, to an idea, which has prevailed extensively, *to wit;* that agriculture is less respectable, as a permanent pursuit, than other avocations. This idea is composed of unmixed error. There is no employment of man more important; and when conducted with appropriate intelligence, none more honorable than this. The same

tendency may be also, in part, ascribed to the eager desire for rapid accumulation, which has been so prominent a feature in the proceedings of the last few years. The slow and moderate returns, which the soil affords to its cultivators, have been, too often, spurned for those golden harvests, that have dazzled so many eyes, on fields to which the plough and the sickle are unknown. Meanwhile, the moral considerations, which are, so immensely, in favor of the well-tried path of patient effort, have been overlooked.—But eyes, before which visions of uncounted wealth have been holding their seductions, are beginning to see things in the light of sober truth. Phantoms have vanished away. Realities are now seen and felt. The attention, the hopes of thousands, who lately looked upon the cultivation of the soil as fit only for the patient plodder,—alike destitute of ambition and enterprise,—are now turned to agriculture, as the rich fountain whence the very life-blood is diffused through the community;—as a mine of wealth far more substantial than any to which the brains of speculators have given birth. Multitudes, thrown by the disasters of the times, from their airy castles and brought to the ground, are now trusting, like Antæus in the fable, for support, to their mother earth.

A pursuit, like the farmer's, should never be deemed unworthy the attention of an enlightened, patriotic man. The celebrated games of Greece, in her proudest days—games designed as nurseries of a patriotic spirit and of hardy virtues—were unworthy in comparison with a festival like yours;—a festival designed to promote the peaceful and healthful pursuit of agri-

culture. The object of your association, gentlemen, is unmingled good. In every light in which agriculture can be viewed, it claims respect. It was to a branch of this occupation that our common Father was devoted, when fresh from the forming hand of the Creator. It was the prominent pursuit of men in the golden age—days of which we read as adorned with simplicity and innocence. And, within the limits of authentic history, we find, among nations most eminent for whatever was great and honorable, this mode of life held in special and deserved respect.

> "In ancient times, the sacred plough employed
> The Kings and awful fathers of mankind."

'It is,' says a distinguished author, 'the subserviency of agriculture to the wants of mankind, connected with its sober and healthful pleasures and the spirit of independence, which it fosters, that has secured to it, in every age, the first rank among the useful arts; and obtained for it, in every country, the patronage of those most eminent for wisdom and virtue. The honors paid to it, in China, take their date from the remotest antiquity; and through the purer ages of the Roman Republic, it was held in the highest estimation. In England, the name of a Russel, so proudly distinguished in her annals, stands pre-eminent among those who have patronized this noble art. And the great founder of American liberty, when the toils and dangers of warfare were ended, retired to the cultivation of that soil, which his valor and his virtues, had rendered free.'* And all classes, in so-

* Reviewer of Sir H. Davy on Agricultural Chemistry.

ciety should rejoice in every effort, like yours, gentlemen, to bring this eminently important pursuit into greater favor. We see, in such efforts, auspices which should gladden every patriotic heart. It certainly argues wrong somewhere, that a branch of business, of such paramount importance to every order of the community, should have been permitted so far to languish as to render us, in no small degree, dependent for our bread upon the South and West, and even upon Europe. In the elaborate and excellent address* delivered before you, on your last Anniversary, the orator, after glancing at the decline of interest in agriculture, among a portion of the community, and the readiness with which they entrust themselves to the current of hazardous enterprises and speculations, observed: "the present state of things can hardly be of long continuance." How soon was that prediction fulfilled! The tide has already turned. Many, who seemed to have forgotten that the productions of agriculture are the support of man, would now look upon the possession of a good farm as almost an earthly paradise. Agriculture is now the chief hope of this nation. Its productions are looked to, as the means of wiping off our foreign debt; and of giving an impulse to the first wave, in that tide of future active prosperity, for which all hearts are so anxiously waiting.

The condition of the farmer, among you, is as desirable, or more so, indeed, than in any other portion of the world. You possess a high advantage over the

* By N. W. Hazen, Esq.

husbandmen of most countries, in being the proprietors of the soil you cultivate. You thus feel, to its full extent of influence, the stimulus of personal interest in the subject; in the processes of culture adopted; the kinds of produce; the improvements made, &c. That interest, like the principle of gravitation in the physical world, gives union, system, vigor, to all your plans and efforts.

In Sicily, once, like Egypt, the granary of Rome, we are told, that the nobles own about two-thirds of the soil, while they pay but one-fifteenth of the taxes. And the husbandman, even after he has raised his corn, cannot, without permission from a higher power, sell a loaf to a hungry traveller without being subject to fine and imprisonment. In Italy, often called the garden of Europe, blessed with a most fertile soil, beautiful fields, well watered, covered with perpetual vegetation, divided into a thousand small enclosures, all cultivated like gardens;—yet, says the traveller, on entering the houses of the cultivators, you observe an entire absence of all the conveniences of life, a table of the most extreme frugality, and an appearance of the greatest penury, in the midst of a country producing every thing which the wants of the most luxurious can require. The cultivator is not the proprietor of the soil. He is reduced to a condition of extreme poverty. He feels no ambition to make improvements. Being too poor to hire laborers, the cultivation of the soil is not conducted with that neatness and efficiency essential to the best results. Indeed, so broken are his spirits by his condition, that we are told, on good authority, that the la-

borer, who is hired by the day, will accomplish three times as much as the peasant, who works for himself. The classical Addison thus describes the condition of the Italian husbandman:

> "But what avail her unexhausted stores;
> Her blooming mountains and her sunny shores?
> The poor inhabitant beholds in vain,
> The reddening orange and the swelling grain;
> Starves in the midst of nature's bounty, curst;
> And, in the loaden vineyard, dies for thirst."

If we have not a soil of equal fertility, we should thank Heaven for a still richer blessing;—that we can enjoy, without fear, the fruits of our industry. In this interest in the soil, in its productions, in the results of your intelligence and zeal as applied to its cultivation, you possess a far greater good than you would in the fertile land of Egypt, if, at the same time, you lived under laws which broke the manliness of your spirit; which tore from your possession productions reared by your toil, moistened "by the sweat of your brows." Take from man the stimulus, which this personal interest affords, and he sinks into imbecility and hopelessness. Give full play to such incentive, and man's nature is elastic; he is prompt to see and to improve advantages. And never had such incentive fuller play than amongst us; and not only should it make us proud of agriculture, as an honorable pursuit; but make us prize at its just value the fair inheritance of freedom we enjoy, that that inheritance was, in no small degree, purchased, secured, and given into our hands, by the hardy and spirit-

ed generation, who had been reared up to mental independence and bodily vigor, amidst the pursuits of agriculture.

Much as the institutions and condition of ancient Greece have been praised, we have reason to believe that, in portions of her territory, the cultivators of the earth feared to inhabit the open country and detached dwellings, at certain seasons. They were exposed to the lawless depredations of marauders. We are informed from sources* entitled to high credit, that after the toils of the day, in the open country, the husbandmen sought safety and shelter, by night, within some walled city. They carried their arms into the fields, and, like our fathers in New England, took up the weapons of defence or the implements of husbandry, as circumstances required.

There is no man more fully independent, both in spirit and condition, than the farmer. Receiving the means of subsistence directly from the bounties of Providence, he relies less than others, upon the aid of those around him. If diligent, he may, ordinarily, count upon a competency in the return of his labors, and his mind is free from those perplexing cares connected with pursuits liable to great and sudden fluctuations.

> "Sure peace is his; a solid life,
> Rich in content; in nature's bounty rich."

You are associated, gentlemen, to encourage and improve a department of industry entitled to special respect, as the supporter and protector of almost all other arts and pursuits. What would become of com-

* Mitford's Greece, Xenophon's Anabasis.

merce, important as it is, were agriculture, generally, in a depressed condition; did no nation produce more of any article than was requisite for its own consumption? What would be the condition of the numerous manufacturers, who have exhibited such commendable ingenuity — multiplied, so much, the comforts of life — had not agriculture afforded them the means of subsistence, while exerting their skill in their various departments? Indeed, suffer this pursuit to languish, and the wheel of national industry must cease to revolve.

If he, who causes two blades of grass to grow where but one grew before, is a public benefactor; he, surely, who improves the quality of agricultural products; the form and value of stock; the appearance and fertility of farms, is one of the most meritorious of citizens. He not only adds to the means of human support, he also contributes to the comforts and embellishments of life. Whoever is a friend to industry and the countless blessings of which it is the parent, should encourage agriculture; for its products not only furnish many of the materials, upon which skill and labor are applied in other departments, but give strength to the sinews and muscles of the right arm of industry itself. The higher the degree of cultivation, the more abundant the means of subsistence, whence provision is afforded for the greater number of laborers in other branches of enterprise. In improving agriculture, you are nerving the arm of human industry with new strength; you are thus promoting results of the utmost importance to the general

improvement of society. For, under Providence, there is truth in the observation of the poet —

> "Whate'er, exalts, embellishes,
> And renders life delightful,
> All is the gift of industry."

It is among the many circumstances, which should highly recommend agriculture to our regard, that it is conducive to health. "A sound mind in a sound body" — not only a great blessing in itself, but necessary to our full enjoyment of every other blessing — is characteristic of the cultivators of the soil. And what is the glitter, by which multitudes have been dazzled in other lines of life — with their unceasing struggles; their oft-disappointments; the wear and tear of their health and spirits — compared with the equanimity and energy of mind, and health of body, which are the farmer's lot?

And, it is a consideration of no small importance, that agriculture is highly favorable to the formation of a virtuous character and habits. Your constant employment and attention, guard the mind from many of the dangers to which, in some other pursuits, it is exposed. The contagion of corrupt example, so destructive often to the moral health of densely peopled places, can act but in a much smaller degree, upon the scattered inhabitants of agricultural communities. You are favorably situated, in a remarkable degree, for a direct parental influence upon your children. And then, again, you labor amidst the beautiful and magnificent works of God. The wonders of vegetation, — from the first buddings of the tender plant, through all the changes which terminate in the ripe

and mellow harvest, — these are, admirably fitted to stamp religious impressions upon the mind. In a good degree, removed from the sources of luxury and excess, you partake of those simple and frugal pleasures best adapted to the health of the body and the soul. While multitudes, eager to traverse a shorter road to wealth, press on in a more exciting career — while

> " They mount, they shine, evaporate and fall,"

you pursue the path of steady application, free from their temptations and perplexities. Embued with the right spirit, surrounded by such obvious proofs of the Divine Agency and Benificence, how warm should be your hearts with gratitude, as you consider;

> " How good the God of Harvest is to you,
> Who pours abundance o'er your flowing fields."

Agriculture should ever stand high in the estimation of true patriots. I would not speak disparagingly of other pursuits. I look with admiration upon the progress made in the mechanic arts. I hail, as signs of good, the great advances effected in manufacturing skill. I delight to see commerce opening broad pathways from nation to nation; but still, as the foundation of national prosperity; as the great source whence other branches of industry must draw their materials; as the nurse of simple habits, manly virtues, and an independent spirit, we must look to agriculture. And I know not in what better way you can shew your patriotic spirit, than in your exertions, as a Society, to encourage this important branch of industry. You not only thus enlarge the means of

human support, and multiply the national resources; you also fan the flame of public zeal. Farmers are looked to, for sound sentiments touching the public interests. Your situation, your pursuits, your general respect for moral and religious principle, are favorable to the cultivation of such sentiments. The greater the good influence you exert, the better for our land. And whatever improvements are made in your important pursuit, will be the means of increasing your general influence. All the ripe fruits of your past experience; every Anniversary of your Association, by which a spirit of inquiry, in your pursuit, is awakened; effort encouraged; good feeling among one another promoted; is a public benefit. And should true patriotism slumber elsewhere, have we not reason, in the past history of our land, to believe it will continue to warm the hearts and nerve the arms of our husbandmen?

The improvements, which skill and effort have already effected, in agriculture, not only confer a well-merited encomium upon its intelligent friends, but also afford the strongest incentives to perseverance. The benefits resulting from an improved scientific mode of cultivation have been signally shewn in the British Isles. In France, two thirds of the laboring people, we are told, are employed in agriculture; while so much more perfect is the system in Great Britain, that less than one third are occupied in this pursuit — hence, the multitudes engaged in commerce and manufactures. The value of the annual excess of British over French agricultural products, a few years ago, was estimated at twenty-four millions

sterling; while the surface in the former country, under cultivation, was less than half that of the latter; and this, while the advantage, in point of soil and climate, is acknowledged to be on the side of France. This fact speaks volumes in favor of individual and associated effort for improvement.

The quality of productions and stock has been much improved by skill and care. 'It is probable,' says Sir Joseph Banks, 'that wheat did not bring its seed to perfection in England, till hardened to it by repeated sowings.' We are told too, that, by attention, the crab apple has been converted into the golden pippin. And the pear, probably a native of the South of Europe, has been naturalized in Britain. That the quality of the fruit is much affected by the quality of the seed, is a well-known fact, which, were all farmers to practice upon it, in their husbandry, would abundantly repay them for all their trouble.

In England, such pains have been taken, by enlightened public spirited individuals, in improving their stock of cattle, that since 1750, we are told the weight of cattle and sheep has a good deal more than doubled.* The prices at which cattle have been recently sold near Philadelphia, as well as the specimens offered at this day's exhibition, shew that similar improvements, in this respect, are in progress in our own country.

Improvements in the modes of cultivation have been already very great. The grand improvement in modern agriculture in Great Britain, the introduc-

* Edinburgh Review.

tion of green crops, by which an abundant supply of food has been secured for stock, might, doubtless, be carried much farther than it has been, amongst us; it is said to have effected as great and beneficial change in that country, as the introduction of the steam-engine and spinning-frame has done in manufactures.* High as is the present system of cultivation in Scotland, not many years since, we are informed, in parts of it at least, that their mode of ploughing was with four horses abreast, preceded by a man, his face toward the team, thus dragging, by a rope, the horses after him. The implements of husbandry, in consequence of the interest which has been awakened in agriculture by associations like yours, are much more convenient and efficient than formerly.

The powers of nature have been made much more productive, by the application of human ingenuity, and the probability now is, by the deep insight which has been effected in natural science, that those powers may be developed almost beyond calculation.

Travellers still speak with admiration of the remains of those works constructed by Egyptian kings for the distribution of the waters of the Nile. Similar works were also constructed for the distribution of the waters of the Ganges and other rivers in India; and both countries have been celebrated for their fertility.

Covered as they were with the densest population, still in seasons of ordinary crops, they were able to export great quantities of grain. The great fertility

* Edinburgh Review.

of Lombardy is ascribed to the practice of irrigation. In the richest parts of the Milanise, the grass, chiefly clover, is cut three or four times a year. Your attention, I perceive, from your publications, has been turned to this mode of fertilizing the soil; and when the population shall be more dense amongst us, may we not believe, that the capabilities afforded, by our many streams, of enriching the land, will be fully improved? Says a distinguished chemist and practical agriculturalist,*—"of all the agents which may be employed as amendments of the soil, there is none of which the action is more powerful than that of water. Not only does it contribute to the nourishment of the plant, by its decomposition, which deposits in the vessels its elementary principles; but it acts still further, by promoting the fermentation of manures, and by conveying into the vegetable organs the juices and salts. Independently of these properties, water dilutes the sap which has become thickened in the body of the plant, and facilitates its circulation; the soil is also softened by water, and thus rendered more permeable by the roots and by atmospheric air, which supplies them with the moisture it contains." Frequent irrigations are abundantly useful to poor, light or sandy soils.

The improvement of the soil will ever be a prominent object with intelligent farmers. The best earths will be, comparatively, unproductive, unless thoroughly divided and softened by the plough, spade and hoe; thus manures which have been sunk by the rains, will be brought near to the surface; roots have a better

* Chaptal.

opportunity to spread; weeds be destroyed and converted into manure. An eminent writer on agriculture tells us, that on certain lots, cultivated entirely by the spade, in France, the products were double those in its immediate neighborhood, on lots cultivated in a different manner. Such a mode of cultivation is applicable only where labor is abundant.

In some countries, fire is used to improve the soil. The process suitable to every cohesive, clayey soil, is thus described: "A layer of from two to four inches in thickness, is removed from the soil in clods; little heaps of combustibles are formed, — thistles, fern, and shrubs, that grow upon the spot. These are covered with the clods, and, in a few days, are set on fire. When the whole has become cool, the heaps of ashes are spread over the surface, and thus mixed with the soil. By this operation, the parts of the soil are made less compact and cohesive; the inactive vegetable matter is converted into manure; insects and the seeds of weeds are destroyed." The burning of stubble on the field — practiced by some farmers — is recommended by an eminent chemist, for two reasons: — it purifies the soil from insects and from the seeds of noxious plants; and it forms a thin layer of carbon, which, by its extreme division, is capable of being absorbed by the plants.

We are told, that notwithstanding the examples and the writings of enlightened theoretical farmers, in France, agriculture has not arisen above mediocrity, mainly because the farmers have been ambitious of having too large a portion of land under cultivation. Experience has proved, abundantly, that the

farmer best consults his own interest by devoting his whole attention to such portions as he can manure and cultivate thoroughly. His own labors will then be most ably seconded by the powers of nature.

The introduction of a rotation of crops is considered as one of the greatest steps ever taken in the advancement of agriculture. To follow this system with advantage, a few general principles have been laid down by Chaptal, which I take the liberty of offering to your attention, as far more valuable than any thing in my power to suggest.

"I. All plants exhaust the soil. They are partially supported by the earth, the juices from which constitute an important part of their nourishment.

II. All plants do not exhaust the soil equally. Air and water help nourish them; different kinds of plants require the same nourishment in different degrees.

III. Plants of different kinds do not exhaust the soil in the same manner. Plants with spindled or tap roots draw nourishment from layers of soil in contact with the lower part of the root; while those whose roots are spread near the surface, exhaust only that part of the soil.

IV. All plants do not restore to the soil either the same quantity or the same quality of manure. The grains exhaust a soil the most, and repair the injury the least. While some leguminous plants restore to the soil a great portion of the juices they receive from it.

V. All plants do not *foul* the soil equally. Plants are said to foul the soil when they promote or permit the growth of weeds. Plants which have not large leaves fitted to cover the ground, foul the soil."

From the above principles the following conclusions have been drawn.

1. That however well prepared a soil may be, it cannot nourish a long succession of crops without becoming exhausted.

2. Each harvest impoverishes the soil to a certain extent, depending upon the degree of nourishment which it restores to the earth.

3. The cultivation of spindle, or tap roots, ought to succeed that of running and superficial roots.

4. It is necessary to avoid returning too soon, to the cultivation of the same, or analogous kinds of vegetables, in the same soil.

5. It is unwise to allow two kinds of plants, which admit of the ready growth of weeds among them, to be raised in succession.

6. Those plants that derive their principal support from the soil, should not be sown excepting when the soil is sufficiently provided with manure.

7. When the soil exhibits symptoms of exhaustion, from successive harvests, the cultivation of those plants which restore most to the soil, should be resorted to.

These principles form the basis of a system of agriculture, rich in its products, but richer in its economy.

To procure a good supply of manures will ever be an important object with the skilful farmer. And so much has already been written upon this subject, so many materials, vegetable, animal and mineral, may be converted to this use, that the farmer who does not enrich his lands, is without excuse. In the use of this fertilizing substance, its preparation, its adapta-

tion to soils, there is much room for the application of scientific principles; and the farmer would find his account, in this relation, in reading faithfully scientific works on agriculture, if such reading gave him no other valuable instruction.

Astonishing effects have been produced in England and Scotland, by the use of bone manure.

The most efficient manner in which dignity and popularity can be given to agriculture, is to have the gentler sex interested in the duties appropriate to the farmer's domestic arrangements. The names of Ladies eminent for their strong domestic taste, have been embalmed in the memory of generations. And the numerous specimens, both useful and ornamental, of female skill and workmanship, which have been exhibited, give ample and gratifying proof that your wives and daughters sympathize in your efforts for improvement; and while you are enriching and adorning your farms, they are anxious to make your homes happy by the exercise of their taste and ingenuity, as well as by their smiles of affection and contentment.

A prominent difficulty, in advancing a general improvement in the husbandry of the great body of farmers, arises from an attachment to existing usages, and a dread of innovations. A disposition to adhere to established usages, though answering some good purposes, yet indulged too far, becomes an effectual barrier to progress. Did farmers reflect, that established usages, that all well-proved improvements, in all departments, — ploughing, inoculation, printing, the use of steam, canals, rail-roads, courts, juries,

schools, &c. — were all once innovations, they would, at least, listen attentively to the explanations of any alleged improvement, before utterly condemning it as an innovation. Such is, however, the power, which a regard to their interest exercises over men, that when convinced that changes will promote that interest, they will adopt them. Without putting them to the hazard of untried expensive experiments, you are placing within their reach, well-attested results.

Your experiments, under the direction of scientific principles, based on the foundation of the soundest philosophy, facts, lead to principles which the farmer, while he hazards nothing, gains much, by adopting. The spirit of emulation awakened by your premiums; the impulse given by your exhibitions; the dissemination of useful knowledge by your publications, cannot fail to reach and act upon the minds and usages of many farmers, who are not members of your association. The lights of your experience will thus be seen and improved afar off.

Can we recommend too highly, to the cultivators of the earth, the importance, not only of education at large, but of that department of it applicable to the theory and practice of farming? Education will ever be a part, at least, of the very breath of liberty. And in addition to the advantages hitherto enjoyed by us, in this relation, we have a Board of Education organized, and now bending its energies to the noble object of elevating and improving our common schools. The fidelity with which you avail yourselves, on your children's behalf, of the advantages thus open to you, will be rewarded by blessings, the full worth of which, time alone cannot disclose.

The recent impulse which has been given to the investigation of natural science, may be productive of incalculable good to the farming interest. And all cultivators of the earth should, at least, be thoroughly skilled in the various chemical properties of different soils, plants, and manures. Such knowledge, in its application, would prove a mine of wealth.

The importance of disseminating information among farmers, touching their profession, has been felt in almost all ages, by the most enlightened Governments. Important works have come down to us, from the ancients, upon this subject. The Royal Society, in England, have given much attention to it. The science of agriculture is, publicly, taught in the Swedish, Danish, and German Universities. Spain invited the great naturalist Linneus to superintend a college founded for the promotion of agriculture. In a new college, in Michigan, a department is to be expressly devoted to this important branch of industry. In some of our seminaries of learning, the students are enabled to defray a part of their expenses by devoting a few hours a day, to gardening, farming, or some mechanical employment;—thus not only are the expenses of education lessened; the health promoted; a better practical education gained; but the pupils, as they are scattered through the community, are prepared to aid in the improvement of the most important of human arts.

Agricultural surveys, in Great Britain, have been attended with the most favorable results; and the farmers of Massachusetts have reason to congratulate themselves, that such a survey of the Commonwealth

is now in progress, under the direction of a gentleman* whose zeal and intelligence in connexion with agriculture are well known to this Society and to New-England; and who has given a pledge of his ability to discharge this duty in the fact, that he has adorned whatever he has undertaken.

In a former address† before you, the great privileges and advantages of the New-England farmer, compared with the condition of emigrants to the South and West, were ably and conclusively shown. Though our soil may now be inferior in fertility to that in the West and South, yet in all other points pertaining to health; the state of society; the means of intellectual, moral, and religious improvement — matters, which constitute the best elements of happiness — the advantage is, most decidedly, in favor of New-England. We have strong ties, too, to bind us to this soil. It was the stage on which occurred some of the most thrilling incidents in the lives of our fathers. It witnessed the most signal proofs of their firmness and courage — their trust in God. It contains their mouldering remains. Affected as we should be, by the recollection of their character, labors, and sacrifices; treading a soil which drank their blood; living beneath a sky, which looked down upon their deeds; — every circumstance is fitted to attach us to the soil; to nurse a manly spirit; to form a hardy and virtuous character. Shall we not, then, better consult our happiness as farmers, by improving, to the utmost, all the privileges and advantages, which the soil of New-England affords us,

* Rev. Henry Colman. † By the Hon. Jeremiah Spofford.

with its historical associations and the high moral character of its cultivators, than by turning our backs on our father's graves, and seeking new homes, where the means of physical comfort, intellectual culture, moral and religious health are, far less amply, enjoyed ?

REPORTS, &c.

ON FARMS.

The Committee of the Essex Agricultural Society, on Farms, having attended to the duties assigned them, respectfully submit the following REPORT:

IN offering premiums for the best cultivated farms, the Essex Agricultural Society has two principal objects in view; first, to induce individual farmers to pay a more particular and systematic attention to the manner of cultivating and improving their land, and second, to collect a mass of valuable practical information on agricultural subjects, by requiring that each candidate for the premiums shall furnish a written statement of the character of his farm, and his method of tilling it, together with any improved modes of cultivation which his experience may have taught him.

That these objects have been, to a certain extent, successfully attained, must be sufficiently obvious to any one who will read the successive reports of this Society, and who will compare the present state of the farms in this County, with their condition several years ago. At the same time, it is equally certain, that the benefits contemplated by the Society, and which might reasonably be expected, have been but very partially accomplished. The committee on farms have been compelled to regret, year after

year, that so few farmers have been induced to become competitors for the premiums offered by the Society. In the years 1834 and 1835, only a single farm was entered, and the number has not generally exceeded two or three. This appears the more remarkable, when we consider the number and value of the premiums.

Two farms have been entered for premiums, the present year, one by Joseph Howe, of Methuen, and the other by Erastus Ware, of Marblehead. Both these gentlemen deserve much credit for the flourishing state to which they have brought their farms, compared with their condition when they came into their hands. They have been particularly successful in reclaiming some swamp land, which formerly disfigured their farms. By draining off the water, exterminating bushes, and sinking the stones beneath the surface, they have caused these unproductive swamps to produce heavy burdens of English hay. It will be seen by their statements, that Messrs. How and Ware have been in the habit of selling a considerable part of their produce. Our own experience has convinced us that this is, in many cases, the most profitable course for those persons who reside in the neighborhood of a good market.

Any further remarks by the committee are rendered unnecessary by the full and satisfactory statements furnished by the gentlemen themselves.

The committee have awarded the first premium of thirty dollars to Joseph Howe, of Methuen, and the second premium of twenty-five dollars to Erastus Ware, of Marblehead.

By order of the Committee.

JOSEPH KITTREDGE, *Chairman.*

December 30th, 1837.

JOSEPH HOWE'S STATEMENT.

To the Committee on Farms of the Agricultural Society, in the County of Essex:

Gentlemen — The farm that I offer for premium, contains 108 1-2 acres. The soil is hard and rocky, and more particularly adapted to the growth of hay than of grain, as you will perceive by our crops. I this season mowed 35 acres, sowed about 11 acres with oats, and planted about 5 acres; the remainder is pasturing. I cut, the present season, as near as I could estimate, from 70 to 75 tons of hay on the home farm, and about 4 tons of meadow hay away from home. I sowed 5 acres of oats on a piece of pasture land, which was last year planted with corn, with no other manure than a little compost in the hill, and raised 30 bushels to the acre, making 150 bushels Another piece, containing 3 1-3 acres, raised 30 bushels to the acre, making 100 bushels. Another piece, containing 2 1-2 acres, (that was last year well manured and planted with potatoes,) in consequence of excessive wet after they were sowed, were considerably injured, but I think we shall have 40 bushels to the acre, (although they are not all threshed,) which will make 100 bushels; making in the whole 350 bushels. I usually sow 3 bushels to the acre. I planted 3 acres and 30 rods of pasture land with corn; ploughed about two thirds of it in September, the remainder in April; carted on 17 cart loads of barn manure to the acre; then ploughed about one half of that which was ploughed first; harrowed it, planted it May 24, three feet one way and two the other with Canada corn, with 4 bushels of ashes and 2 bushels of plaster paris in the hill to the acre; hoed it three times; some part of it was considerably injured by the worms. It yielded 308 bushels of ears of sound corn; two bushels of which

I shelled, which made one bushel and four quarts of corn, which makes 54 bushels to the acre. I planted from 8 to 10 kernels in a hill; although I think three or four is enough to grow in a hill. I could see no difference between that which was ploughed in the fall, ploughed in the spring, or cross ploughed. I planted one acre and 129 rods of potatoes in one piece; the sward was turned in about the 20th of April; carted on 30 cart loads of stable and compost manure to the acre; planted them the last of May and first of June; planted them three feet one way and two the other. They were considerably injured by the drought and were not as large as our potatoes usually are. Had 600 bushels, which makes 332 bushels to the acre. I raised 100 bushels on another piece, making in the whole 700 bushels. I picked from the trees 175 bushels of winter apples, beside 100 bushels of sauce apples, which dropped from the trees; the refuse apples I used mostly for fattening beef and pork. Our dairy has not been as large as usual, (as I sold several cows in the spring.) It has consisted only of 3 cows and 4 two year old heifers, from which the calves were taken nearly as follows: 2 the 1st of May, 1 the 20th of May, 3 the 5th of June, and the other the 15th of August;—made previous to the 15th of November, 615 lbs. of butter and 400 lbs. of cheese, besides using as much as one cow's milk in the family. As to the growth of my stock, I can state nothing definite, as I have no regular system by which to be governed, but manage as circumstances seem to require. I usually make but little pork, as I sell most of my surplus grain and potatoes. The whole amount of labor employed from the first of April to the first of November, including all my teaming and marketing (which is principally to Lowell), haying and threshing my grain, is equal to two hands the 7 months, and a third 4 months. Their wages amounted to $240.

As entering my farm for premium was entirely unpremeditated, therefore I cannot give so definite a statement, in any respect, as I might otherwise have done.

In compliance with your request, I also give a brief statement of the management of my farm and the comparative increase of crops for a few previous years. I usually mow my fields from four to six years; then plough and manure them; plant one year, the second year sow with grain and hay seed, —although I have recently practised top dressing with compost manure with very good success. As most of my pastures are suitable for culture, I occasionally plough them, plant one year with corn, manure in the hill with compost manure, and the second year sow with grain and hay seed; which much improves the pasture. I have purchased, since the Spring of 1829, on an average, from 12 to 15 cords of manure per year. I have also used a few tons of plaster paris with very good success. I also last year used 100 bushels of ashes. As to compost manure, we make as much as circumstances will admit of.

I have about five acres of meadow land, which formerly produced but very little hay, and that of an inferior quality. The mud in the deepest part was about three feet deep, and gradually decreased on every side to the upland. I commenced ditching it in the Autum of 1828, and did but little more until the Autumn of 1832, when I carted on the contents of a barn cellar I had been digging; — sowed on hay seed, and the next year it produced a good burden of English hay. Since that time, I think it has produced from two to three tons to the acre. I cannot state precisely the expense of draining said meadow, but think it will amount to about $30 per acre. I have a few acres of low land adjoining said meadow, which formerly produced but very little, and by top dressing, now produces a large burden of good hay.

I think that my hay has increased at least one half within the last nine years. I have usually employed two hands during the season, but for the last two years have had some additional help at certain seasons of the year.

My corn has produced, I presume, beyond your expectation. I find it is the case with others in our neighborhood, who have planted the same kind of corn, that it has proved beyond their expectation previous to gathering it. The corn that you saw in my field was not so good as it would average, as the middle of the field was much the largest.

JOSEPH HOWE.

Methuen, Nov. 29, 1837.

ERASTUS WARE'S STATEMENT.

To the Committee on Farms for the County of Essex:

GENTLEMEN — My farm, which is entered for premium before your Society, contains about 85 acres, 43 of which are improved in mowing, tillage, and orcharding; lying in an oblong square, being in length about four times its breadth. It is bounded on the south-east end by the sea shore, which forms a cove; this furnishes some manure for the field, which is naturally of good quality, consisting of gravelly and sandy loam, with about 3 acres of wet meadow land, that I have converted to the best mowing, by ditching, crowning, cultivating and top dressing. It now produces as much good merchantable hay, as can be dried on the ground. My English hay was shortened this season by the severity of the winter and the beds of ice that lay upon the field.

The crop of Indian Corn was almost a failure; — not more than half the seed came up — and after the

long continued sea breezes to which we are exposed, cold nights and dry days in the latter season, proved unfavorable. My crop of onions suffered much from the same causes. The wheat and barley crops are much lessened by charlick, which abounds in our land, and requires a longer time for its eradication than I have yet bestowed upon it.

The Produce of my Farm by estimation, was as follows:

1 Acre of Wheat produced only	14 1-2	bushels.
1 1-2 Acres of Barley,	26	"
2 1-2 " " Oats, partly threshed without unbinding the bundles,	95	"
2 1-2 Acres Indian Corn, 100 bushels of ears, with an unusual proportion of soft unripe corn,	50	"
White Beans among corn and squashes,	16 1-2	"
Red Top and Herd's Grass, seed in chaff,	7	"
Carrots,	85	"
Mangel Wurtzel,	200	"
Ruta Baga,	74	"
French Turnip,	60	"
Flat Turnip,	90	"
Onions,	40	"
Blood Beets,	25	"
Parsnips,	6	"
English Hay, estimating 500 square feet of settled Hay to 1 ton,	41	Tons.
Oats mowed for fodder,	5	"
Second crop,	2½	"
Marrow Squash,	4	"
Black Pumpkin,	1	"

Set about 3000 cabbages, which produced but a small crop. Had about two acres of Summer vegetables, such as peas, beans, cucumbers, melons, tomatoes, &c., including half an acre of asparagus, mostly set the year before, and part the present year, of roots two years old. The produce of the last mentioned two acres was disposed of in so promiscuous a way, that I cannot give a very correct account, but should judge it might amount to $150. As the manuring, planting, and culture, were nothing peculiar, the particulars I shall omit to mention.

My grass land I top dress with manure collected

from the sea shore as I have opportunity. The grass land has most of it been cultivated during the five years that I have improved the farm, with a view to renovate it, which from long neglect was very much needed. The land generally abounds in twitch grass, which I find it is not much trouble to subdue, by ploughing soon after the hay crop is off, for the next year's cultivation, or by cultivating cabbage or any other crop that will best shade the ground. My potato ground was ploughed about the 1st of September last year; this year, after spreading about 5 cords of yard and sea manure per acre, cross ploughed, harrowed and furrowed 3 1-2 feet each way, to enable us to operate with the plough and cultivator, before hoeing. This process has overcome the twitch grass, with which the land was overrun. Notwithstanding the distance of the rows, this piece of land, weak and feeble, produced 250 bushels per acre of excellent potatoes, principally of the Chenango kind. My corn land was old ground in good condition; had a light dressing spread. About one acre was ploughed last year to the light dressing · I added some old manure in the hill this last year, better than the other. The missing corn hills were supplied by planting white beans the first time hoeing, and the third or last time sowed flat turnips.

Marrow squash, which I think is a profitable crop when successful, I plant ten feet apart, with strong manure in the hill.

I set the last year half an acre of asparagus, the rows 40 inches apart, the roots 12 inches in the row. The bed this year produced about 25 dollars worth.

I have about 75 apple trees that have become fruitful. They have been much improved the last five years by loosening the turf round the roots, a little dressing and annual pruning. They have yielded this year 160 barrels of good Winter apples, a part of the refuse of which made 4 barrels of cider. I

have set about 200 young trees, apples, pears, &c., all choice fruit.

I have been engaged the five seasons that I have been on the place, in building a house, barn, shed, and other convenient appendages. I have also built about 300 rods of stone wall, and so much improved the condition of my field that it will produce more than double what it did when I began on it. I have been careful in collecting, mixing, increasing and improving the manure as much as possible, by supplying my barn yard and piggery with sea wreck, turf, mud, &c. My stock consists of two horses, one yoke of oxen, and six cows which were in milk last Winter;—it found a ready market, but was so connected with other sales of produce in Winter, and has been disposed of different ways this Summer, that I cannot give any correct account, but will say they have yielded a very fair profit.—I have three fat hogs to kill, that are adjudged to weigh 1300 lbs.

The labor employed, has been as usual, myself, one son 17 years of age, one 15 years, a hired man 7 1-2 moths, and some other additional labor in building stone wall, of which I have made 117 rods, in all have paid 142 dollars — earned by labor done on the farm, 63 dollars. All of which is respectfully submitted. ERASTUS WARE.

ON IMPROVEMENT OF WET MEADOWS.

The Committee on Improving Wet Meadow and Swamp Lands, consisting of N. W. Hazen, Asa T. Newhall, and Amos Shelden,

Have received upon the subject referred to them, the two communications which are annexed. These

sufficiently attest the facility with which such improvements may be made, and the rich benefits which those may expect who undertake to prosecute them judiciously. The committee understood Mr. Dalrymple to state that the average cost of his meadow land, which is that spoken of in his statement, including the price which he paid for it, and all the expenses of cultivation for the first crop, would not exceed $25 00 per acre, and it appears, from the interesting narrative which he has furnished, that he obtained for the produce of a single acre in one year, the sum of $100 50.

It is striking to reflect how many thousands have emigrated to the wilds of the West, leaving behind them New-England, with all its social advantages, and thousands of *prairies* just like this discovered by Mr. Dalrymple, in the very centre nearly of the populous town of Lynn, — in pursuit of lands that will afford a profitable cultivation: quitting the homes and graves of their fathers with an indifference, which would sometimes seem to indicate that the cold calculations of interest had impaired the force of some of the better feelings of our natures, in pursuit of a cheaper and more fertile soil, which the same enterprise, better directed, would have taught them to find in the "Wet Meadows and Swamp Lands" of their own native farms. Add to the productiveness of Mr. Dalrymple's meadow the value which the high privileges of New-England confer upon all the land situate within her borders, and he may safely challenge Illinois, and even the banks of the Red River, for an instance of cultivation equally profitable.

The example afforded by the experiment of Mr. French, is scarcely less valuable to be presented to the farming interest, than that of Mr. Dalrymple. It is upon a smaller scale, and such as a majority of the farms in the County probably afford an opportunity for cultivation. And Mr. French further informs us,

that the necessary labor was done at intervals afforded by the other business of the farm.

It would not be easy, by any commentary, to add to the impressions which the statements of Messrs. Dalrymple and French cannot fail to make. The Committee submit them without further remark. They award the highest premium of twenty dollars to Orin Dalrymple, and the next of ten dollars to Moses French.

N. W. HAZEN,
For the Committee.

December, 1837.

ORIN DALRYMPLE'S STATEMENT.

To the Trustees of the Agricultural Society for the County of Essex:

Gentlemen — In my farm in Lynn, I have a meadow of 70 acres, which eight years ago bore nothing but meadow hay, and produced about one ton to the acre, of a poor quality. The meadow was mostly filled with hassocs. I cut a ditch of 8 feet wide and 4 deep, through the centre of the meadow, and many other smaller ditches to drain the water into the large ditch. The length of all the ditches is about four miles. The whole meadow is covered by a soft black mould, from 6 to 9 inches, and then a greyish substance, I call peat, from 9 to 15 inches deep, upon a pan of clay and sand.

Eight years ago the last Fall, I ploughed 7 acres of this meadow, and in the following spring I sowed 3 acres with oats, 3 1-2 to 4 bushels, 1-2 bushel and 1 peck red top and 1 pound clover seed to the acre. In the summer following, I harvested 50 bushels of oats to the acre. In the Winter following, when the ground was frozen, I carried on 10 cords of compost

manure to the acre. This compost contained two cords of night manure, 4 cords of yellow loam, and 4 cords of gravel, and was spread evenly over the ground in the Spring, as soon as the frost was out. The following Summer I cut on an average, 3 tons to the acre, of good, merchantable English Hay. The following year the 7 acres produced 2 1-2 tons to the acre, and the third year 2 tons to the acre. The Winter after the third cutting, I top dressed the same land with the like compost, ten cords to the acre. The next year the grass was equally good as the first year's mowing, but decreased in quantity the two following years, in the same ratio as at the first manuring.

Two years after my experiment upon the seven acres, I went over about 3 acres of the same meadow, while frozen, and cut off all the hassocs, so as to leave the ground smooth, and hauled off the hassocs. In the Winter I carried on to the land, ten cords to the acre, of manure from the slaughter house yard, where I kept 8 or 10 hogs. Early in the Spring, this manure was well spread upon the land, and I then sowed to the acre the like kind and the same quantity of grass seed as I did on the seven acres. The following summer I mowed the three acres twice. On one acre which I measured, and about as good as any of the three, I cut the first time three tons of hay, which I sold at $25 the ton, the second cutting 1 1-2 ton, which sold at $17. The whole quantity of hay upon one acre that year, amounted to $100 50. The second year I had an equally good crop on this land as the first, but I did not cut the second crop. The third year the crop decreased, as the crop of the third year upon the seven acres. The Winter after the third Summer I carried upon this land ten cords to the acre of the like compost as upon the seven acres. The next Summer the crop was equally good as the first crop upon

the 7 acres, but decreased the two following years, and kept pace with the 7 acres. I am well satisfied that my meadow should be manured, as I have done, and with like quantity of manure, every winter after the third cutting or third summer, and by this management my meadow will continue to produce good crops of grass without any other cultivation, except keeping the ditches well cleared out. I consider this experiment upon the 3 acres the best, considering the amount of labor; and should have continued it upon the remaining portion of my meadow, had the surface been smooth and even, but it was very rough and uneven, so that I was compelled to plough it.

In the exact manner I treated the 7 acres, the three excepted, I have my whole meadow of 70 acres in good grass cultivation, all but 15 acres which I ploughed last fall in order for sowing in the Spring. My crops of oats and grass have been uniformly good as upon the 7 acres. The last Summer my oats were sown late, and I cut them for fodder.

I am, gentlemen, with due respect,

Your humble servant,

ORIN DALRYMPLE.

MOSES FRENCH'S STATEMENT.

To the Committee on the Improvement of Wet Meadow and Swamp lands.

GENTLEMEN — I submit for your consideration the following statement. In 1822 I bought one half of a lot of land containing between 6 and 7 acres, for which I gave the sum of 30 dollars, and had the use of the other half, for the rent of which no definite sum was fixed. In 1827, I gave the owner of the other half the sum of 45 dollars for a deed of the

same, and in full for the use of the land up to that time.

The whole lot had been considered of very little value, and was commonly called "the Swamp." A few weeks before I purchased it, a wealthy farmer, whose house was within forty rods of it, and whose house-lot joined it, refused to give an ordinary cow and calf for the one half.

There were upon the lot some trees, bushes, flags and rushes, and it was subject to being overflowed whenever there was a heavy rain.

Four years since, I attempted to drain it in a different direction, as the natural course was impracticable on account of the long, flat space that the water had to pass over. For this purpose, two ditches were made, by ploughing, digging and scraping, which crossed each other near the centre of the lot, and led off the water by more than half a mile shorter cut. Previous to draining, I had cleared most of it of bushes by cutting and mowing them.

I then turned with the plough some ridges with a space of about forty feet between them and planted with potatoes, beans, &c. A little manure was put into the holes, and a fair crop was produced. In the fall the same land was sowed with grass-seed, without any other ploughing. Last year the produce was two tons of good herds grass hay to the acre.

About half an acre of the land planted with potatoes, with a little coarse manure put into the holes, produced the largest and best crop of that vegetable which I had the last season. After they had been dug, some manure was spread upon the ground, and it was sowed with grass-seed, with no other labor done on it than passing over it the cultivator and harrow. This season, (1837) it bore as handsome herd's grass as I ever saw. Three acres and 144 rods produced two and one half bushels of herd's grass-seed and eighty-seven cocks of good hay; —

twenty-one of them, of an average size, weighed 2174 pounds.

The draining and ploughing were wholly done at intervals when there was leisure from other work, and the ground was dry enough for the business.

There is one day's ploughing of potatoes now growing on the land which promise well. It is now my intention to bring the whole of the remainder of the piece under cultivation the next year.

Some opinion of the increased value of the property may be inferred from the fact that 200 dollars have been lately offered and refused for it.

I did not think of offering this improvement for the premium of the Society until the haying season of this year, or a more particular statement would have been given.

It might be added, that on some of the ridges a little manure was spread; on others there was none. The quantity put upon any part would not exceed three carts full to the acre. The soil of this piece of land is a dark loam with clayey bottom.

Yours respectfully, MOSES FRENCH.

ON INDIAN CORN.

The following letter from Hon. Caleb Cushing, accompanying the Essay of Professor P. A. Browne, evinces that while ably representing the interests of his constituents in Congress, he is mindful of the agricultural interests of the County he in part repreresents:

Washington, 12*th Sept.* 1837.

DEAR SIR, — I have received from a friend in Pennsylvania, the accompanying "Essay on Indian Corn," which I have thought I could not better dis-

pose of, than by laying it before the Essex Agricultural Society, for which purpose I place it in your hands. Independently of the instructive general matter contained in the Essay, it deserves attention particularly on account of the *varieties* of Corn which it describes, any of which it would give me pleasure to obtain in behalf of the Society. In considering these varieties, you will probably be struck by the facts detailed in the letter of Mr. Baden. I have in my possession a small quantity of the seed-corn raised by him, as described in his letter, which I shall send to you by the earliest private opportunity, for distribution at the Cattle Show in Topsfield, the present month; and if you and your friends should be of opinion that it is worth their while to try the experiment of its value, I can probably procure some more of it for that object.

I am, very respectfully,
Your obedient servant,
CALEB CUSHING.

Hon. James H. Duncan,
President of the E. A. Society.

In this interesting Essay, Prof. Browne conclusively shows that the Indian Corn which in the United States takes precedence, in utility, of all other grains, is a native of America. We extract his catalogue and description of thirty-five specimens of Indian Corn in his possession.

"*A.* Yellow Corn.

A a. No. 1. The genuine gourd seed Indian corn, so called from the supposed similitude in shape, between its grains and the seeds of the gourd; the spike contains, when thus unmixed with any other variety, twenty-four rows, which is the highest number of rows on any cob of Indian corn I have ever *seen*. I have *heard* of twenty-six rows. When this

corn is mixed with any other variety, its spike gradually diminishes in its number of rows until it arrives at the maximum of the variety with which it is mixed. Examples of these mixtures are seen in

No, 2, of twenty-two rows ; No. 3, of twenty rows ; No. 4, of eighteen rows ; No. 5, of sixteen rows ; No. 6, of fourteen rows ;* and No. 7, of twelve rows.

A b. No. 8. Is the genuine King Philip Indian Corn, so called from the celebrated Indian chief 'Philip king of the Wampanoags.' It has eight rows, which is the lowest number of rows on any spike of Indian corn. It is a hardy plant, belonging to a high latitude, the seed was originally obtained from the aborigines of the north.

This variety mixes as well with the gourd seed, and Nos. 2 to 6 inclusive are the products of these essays. No. 7 is a mixture of Nos. 1, 8, and 22.

A c. No. 9. The Sioux or yellow flat Indian corn, with twelve rows. The seed was obtained from the Sioux tribe of Indians, who at the settlement of Canada, inhabited the north, but who are now residents of the west.

No. 10. The Sioux, grown in Pennsylvania. — Twelve rows.

No. 11. The Sioux and gourd seed, mixture. Sixteen rows.

B. White Indian corn.

B a. White flint. *B. b.* White flour corn.

B c. White Saccharine, or sweet Indian corn.

B a. No. 12. Genuine white flint. Twelve rows. Virginia.

No. 13. White flint. Ten rows.

No. 14. Early White flint. Twelve rows.

B b. White *flour* corn.

No. 15. From Peru. Eight rows.

No. 16. Pennsylvania. Eight rows. Called in Maryland, Smith's early white.

* Called in Maryland the Dutton Corn.

No. 17. New Jersey. Eight rows.
No. 18. New York. Ten rows.
B a. & *B b.* Mandan Indian corn.
No. 19. A mixture of No. 12 and No. 15. Grown in the Indian village of Mandan.
B c. White Saccharine or sugar corn.
No. 30. The early Saccharine, twelve rows, grains shrunken.
C. Hæmetite, or blood red Indian corn.
No. 21. Common sized hæmetite, with twelve rows and red cob.
No. 22. The red cob with white grains.
No. 23. The red cob with yellow grains.
No. 24. The red cob with brown grains.
No. 25. The red cob with white gourd seed.
No. 26. The red cob with gourd seed and yellow flint.
No. 27. White cob with red grain.
No. 28. Speckled red and yellow grains on a white cob.
No. 29. The same on a red cob.
No. 30. The dwarf hæmetite, commonly called Guinea corn.
D. Blue corn.
No. 31. Blue corn. Ten rows.
E. No. 32. The corn of Texas; each grain is enclosed in a pod or husk, and the ear in a husk.
No. 33. Corn found in an envelope of a Mexican mummy. (The cast.)
No. 34. Corn grown near Sheffield, Yorkshire, England, in 1835, from seed raised by Willaim Cobbett.
No. 35. The famous Dutton Corn."

In answering the question, "Is the Indian corn capable of being improved by culture?" he gives us a letter from Thomas N. Baden, Esq., of Maryland,

which demonstrates that the Indian corn can be greatly improved, both in quality and quantity, by cultivation.

"NEAR NOTTINGHAM, PRINCE GEORGE'S CO. }
January, 26, 1837. }

"SIR — I received yours of the 14th, making enquiry respecting the 'Maryland corn,' which you understood I had raised. I have the pleasure to say, that I have brought this corn to its high state of perfection, by carefully selecting the best seed in the field for a long course of years, having especial reference to those stalks which produced the most ears. When the corn was husked, I then made a re-selection, taking only that which appeared sound and fully ripe, having a regard to the deepest and best color, as well as to the size of the cob. In the spring, before shelling the corn, I examined it again, and selected that which was the best in all respects. In shelling the corn, I omitted to take the irregular kernels at both the large and small ends. I have carefully followed this mode of selecting seed corn for *twenty-two or three years*, and still continue so to do. When I first commenced, it was with a common kind of corn, for there was none other in this part of the country. If any other person undertook the same experiment, I did not hear of it; I do not believe others ever exercised the patience to bring the experiment to the present state of perfection. At first, I was troubled to find stalks with even *two good ears* on them, perhaps one good ear and one small one, or one good ear and a 'nubbin.' It was several years before I could discover much benefit resulting from my efforts; however, at length the quality and quantity began to improve, and the improvement was then very rapid. At present, I do not pretend to lay up any seed without it comes from stalks which bear four, five, or six ears. I have seen stalks bearing

eight ears. One of my neighbors informed me that he had a stalk with *ten perfect ears on it*, and that he intended to send the same to the museum at Baltimore. In addition to the number of ears, and of course the great increase in quantity unshelled, it may be mentioned, that it yields much more than common corn when shelled. Some gentlemen, in whom I have full confidence, informed me they shelled a barrel (ten bushels of ears) of my kind of corn, which measured a little more than six bushels. The common kind of corn will measure about five bushels only. I believe I raise *double or nearly* so, to what I could with *any other corn I have ever seen.* I generally plant the corn about the first of May, and place the hills five feet apart each way, and have two stalks in a hill. I can supply you with all the seed you may need, and I suppose I have now in my corn house fifty, and perhaps more stalks, with the corn on them as it grew in the field, and none with less than *four*, and some *six or seven* ears on them. I will with pleasure send you some of these stalks, and also some seed corn, if I can get an opportunity.

Early last spring I let George Law, Esq., of Baltimore city, have some of this seed corn : he sent it to his friend in Illinois, with instructions how to manage it. A few weeks since, he informed me that the increase was *one hundred and twenty bushels on an acre* ; that there was no corn in Illinois like it, and that it produced more fodder than any other kind. I have supplied many friends with seed corn, but some of them have planted it with other corn, and will, I fear, find it degenerate.

I have lately been enquired of if this corn is not *later* than other kinds? It is rather *earlier ;* certainly *not* later. Corn planted in moist or wet soils, will not ripen so quick as that which is planted in a dry soil. In the former, there will be found more dampness in the cob, although the kernel may appear

equally ripe in both. In the two last years, the wet seasons have injured much corn that was too early "lofted," or housed.

Yours, &c.

THOS. N. BADEN.

ON THE DAIRY.

The Committee appointed to examine the parcels of butter and cheese entered for premium, REPORT:

That for the premiums offered for butter made between the 1st of June and the 9th of July, there was presented—

By Ebenezer King, of Danvers, 45 lbs. of butter made from one cow in the month of June.

By Daniel Putnam, of Danvers, 37 lbs. of butter made from one cow, in four weeks, next preceding the 7th of July.

By Margaret Wardwell, of Andover, 52 lbs. of butter made in June.

By David S. Caldwell, of Newbury, 30 lbs of butter made in June.

That for the premiums offered for the best produce of butter, in the four months next following the 20th of May, there were presented claims

By Mrs. Margaret Wardwell of Andover — and

By Ebenezer King of Danvers.

There were parcels of butter exhibited

By Ebenezer G. Berry, of Danvers — and

By Reed P. Clark, of Beverly.

All these specimens were of good quality — some of them quite superior.

The Committee awarded the premiums — as follows:

To Ebenezer King,	1st	premium	of	$10 00
"	2d	"	"	8 00
To Margaret Wardwell,	1st	"	"	12 00
"	3d	"	"	5 00
To Daniel Putnam,	2d	"	"	7 00
To David S. Caldwell,	4th	"	"	4 00

There were exhibited for premiums the following parcels of Cheeses, viz.

By Samuel Bailey, of West Newbury,	9	Cheeses.
By Isaac Carruth, of Andover,	4	"
By Eliphalet Emery, of W. Newbury,	4	"
By Margaret Wardwell, of Andover,	4	"
By Jacob Osgood, of Andover,	2	"

The Committee awarded the premiums — as follows:

To Isaac Carruth,	1st	premium	of	$10 00
To Jacob Osgood,	2d	"	"	8 00

While the Committee express their thanks, and cheerfully award the Society's money, to those spirited individuals who have come forward and exhibited specimens of the produce of their dairies, they have to regret that there were not more specimens exhibited. It is much to be desired that Farmers from every town in the County, at this Annual Meeting, should bring forward more or less of their products. In every town there is made much good butter, and in many towns, much good cheese. Let it be understood that there will be parcels brought in from each town, and the exhibition will then be a matter of interest, and also of instruction.

The Trustees have offered liberal premiums for the produce of the Dairy, believing this to be an object peculiarly demanding the attention of the Farmers of Essex; — and it is hoped, that the zeal

for improvement will be proportioned to their liberality. For the Committee.

WM. JOHNSON, Jr.

Topsfield, Sept. 27, 1837.

ON MILCH COWS AND HEIFERS.

The Committee appointed to examine the Milch Cows and Heifers, offered for premium, Report:

That there were eight cows and four heifers, exhibited, viz—

By Ebenezer G. Berry, of Danvers, 3 cows, and 1 heifer.

By Daniel Putnam, of Danvers,	1 cow.
By R. A. Merriam, of Topsfield,	1 "
By C. B. Bradstreet, of "	1 "
By Richard Phillips Jr., of "	1 "
By Amos King, of Danvers,	1 "
By Winthrop Low, of Essex,	2 heifers.
By John Torrey, of Newbury,	1 "

After a careful examination of the animals, and of the statements of their produce, &c., annexed to this report, the committee have awarded the premiums as follows:

For Milch Cows.

To Eben. G. Berry, of Danvers,	1st prem.	$10	00
To Daniel Putnam, of "	2d "	7	00
To Eben. G. Berry, of "	3d "	5	00

For Heifers.

To Eben. G. Berry, of Danvers,	1st prem.	$7	00
To John Torrey, of Newbury,		3	00

The heifers exhibited by Mr. Low, of Essex, were

beautiful animals; and it was regretted by the committee, that no statement of their produce was communicated to them; and of course no premiums could be awarded.

The cow exhibited by Dr. Merriam, was the same that obtained the 2d premium the last year — and inasmuch as the committee do not think her entitled to the 1st premium, when compared with Mr. Berry's, no other premium can be awarded for her.

For the Committee.

JOHN KEELY.

Topsfield, Sept. 27, 1837.

EBENEZER G. BERRY'S STATEMENT.

To the Committee of the Essex Agricultural Society:

Gentlemen — I have the following statement to make respecting the two cows and heifers I have presented for premium.

1. The black cow is 8 years old, of native breed, was raised in New Hampshire and bought from a drove when a heifer. I purchased her the 1st of June, the present year; she calved the first of March, about 3 months before coming into my hands. The following is a correct statement of the butter she made from the 19th of June to the 16th of September, viz: 146 1-2 lbs. in 13 weeks, averaging 11 lbs. 4 1-3 oz. and a fraction over, per week; the greatest quantity of butter per week, 12 lbs. 10 oz. A list containing the quantity in each week I have in my possession, and it will be placed at your disposal, if necessary. The last week, the quantity of butter made was 10 lbs. 9 oz., which butter is this day exhibited for premium.

2. The red cow is 7 years old, native breed, and has been in my possession 3 years. The amount of

butter made from her milk the last week in May, before going to grass, was 9 3-4 lbs. Since that time the milk has been used in the family and averaged from 28 to 30 lbs. per day during the Summer months. Her milk is of excellent quality and will yield 10 lbs. of butter per week, on grass alone.

3. The heifer is 3 years old, native breed, was raised in Lynn, Mass. She calved the first of April, her first calf. She averaged 9 quarts of milk per day during the three Summer months. She now gives 7 1-2 quarts of milk per day. Her milk is of a superior quality, and will make 6 1-2 lbs. of butter per week.

The keeping of the cows has been as follows: — 1. The black cow has had on average, 2 quarts of meal and 1 quart shorts per day, till the season for green corn stalks, which she has had daily in common quantity, besides going in common pasture. 2. The red cow was fed one month before going to grass, on cut feed, with 3 quarts of meal per day till going to grass; then on grass alone till the season for corn stalks; since then she has been fed regularly at night with them, together with common pasture. 3. The heifer was fed on stalks and common pasture. Since going to grass, the red cow and heifer have had no grain whatever — have been fed together — the black cow by herself.

Respectfully, Ebenezer G. Berry.

Danvers, Sept. 26, 1837.

DANIEL PUTNAM'S STATEMENT.

To the Committee on Milch Cows, of the Essex Agricultural Society.

Gentlemen — I offer for premium a milch cow seven years old, which I have owned only since last

November. She was raised in North Bridgewater. This cow was hooked in the udder last winter, and seriously injured, as you may notice by observing her; one part of the udder yields very little milk.

This cow calved May 6th. In 16 successive weeks from the time her calf was three weeks old, I made from her milk 147 lbs. and 7 oz. of butter, being about 9 lbs. and 4 oz. per week. The greatest quantity in any one week was 11 lbs. 3 oz. Her milk is uncommonly rich, 6 quarts of it making a pound of butter. The butter is every way good and is remarkable for coming *hard every* week of the season.

During the last winter, this cow was kept the same as my other cows, upon meadow hay, oat-straw, stalks, &c.

In May and June, I gave her about 4 quarts of shorts daily. This is all the grain she has eaten. — Since the early part of July, all my cows have been fed daily with green oats, stalks, &c. This I am obliged to do to keep them in tolerable condition, for my pasture is cold, bushy, and poor. This cow has run with the others in such a pasture.

DANIEL PUTNAM.

Danvers, Sept. 27, 1837.

R. A. MERRIAM'S STATEMENT.

To the Committee of the Essex Agricultural Society:

GENTLEMEN — The cow I offer for premium was raised in Canterbury, N. H., is eight years old, had six calves; has been kept for family's use, and the quantity of butter which she would have made cannot be ascertained.

Her keeping has been of the ordinary kind — good pasture in the Summer, meadow hay in the Winter, salt and English in the Spring.

She uniformly comes in, the first part of May; has averaged the 4 succeeding months, 28 lbs. of milk per day; 18 quarts being the most she has given in one day; quality of milk such as to yield 12 lbs. per week, in the best of feed, of first rate butter.

Her calf last year, 5 weeks old, weighed about 210 lbs., dressed 132; was sold to the butcher for 10 dollars. The present year intending to raise, it had but half the milk; — finally sold it for between 9 and 10 dollars, at six weeks old, to the butcher, at 6 cts. per lb. alive, about the middle of June.

She is perfectly kind and peaceable against any fence, has never spilled a drop of milk since we owned her — five years.

Respectfully yours, R. A. MERRIAM.

Topsfield, Sept. 27, 1837.

ON DOMESTIC MANUFACTURES, &c.

The Committee of the Essex Agricultural Society on Domestic Manufactures, consisting of D. P. King, E. S. Davis, Stuart Chase, George Hodges and Jeremiah Spofford, assisted by Messrs. Fox, Black, and Noyes, REPORT:

That the whole number of entries was eighty-eight, comprising many useful articles, and some of great ingenuity and beauty. The articles were not in every case accompanied by statements sufficiently precise and accurate. An account of the cost of the materials and of the time employed, as well as of the age of the manufacturer, are often necessary to direct the judgment of the Committee. In determining the comparative merits of articles so numerous and various in kind, it is difficult, in a short and hurried examination, to do justice. Some arti-

cles of merit may have been overlooked, and others undervalued. The Committee were highly gratified by the exhibition, and think it creditable to the County. We are much indebted to the gentler sex, for the interest they always manifest in this Farmer's Holiday; their tasteful contributions are a great addition to the attraction of the Exhibitions. The specimens of their ingenious, elegant and complicated handy-work, afford abundant evidence that their delicate fingers have not forgot their cunning. They complete the catalogue of the Water Poet, and verify the distich at its close —

> "Tent-work, raised-work, laid-work, prest-work, net-work,
> Most curious pearl, or rare Italian cut-work,
> Fine fern-stitch, finny-stitch, new-stitch and chain-stitch,
> Brave bred-stitch, fisher-stitch, Irish-stitch and queen-stitch,
> The Spanish-stitch, rosemary-stitch, and maw-stitch,
> The smarting whip-stitch, back-stitch and the cross-stitch,
> All these are good, and these we must allow;
> And these are every where in practice now."
> [See "The Doctor," Vol. 2. p. 202.]

The Committee recommend the following premiums and gratuities:

Domestic Manufactures, &c.

To Mrs. Enoch Dole, of West Newbury, for Carpeting, 1st premium,	$5 00
Mrs. Dorcas Sibley, of Salem, for Stair Carpeting, 1st premium,	3 00
Abigail C. Hoague, of Newburyport, for Carpeting, a gratuity,	2 00
Miss Simonds, of Boxford, for Straw Bonnet, 2d premium,	3 00
Messrs. D. &. J. Pulsifer, of Salem, for eleven pieces of very handsome Painted Carpet, of different patterns, a gratuity,	5 00
For Hearth Rugs, of which there was a large number, of various materials:	
To Abigail Wood, of Beverly, 1st premium,	3 00

To Sarah E. Lunt, Newbury, 2d premium, $2 00
" Mary C. March, of Newbury, gratuity, 1 00
" Mrs. Elias A. Pike, of Newburyp't, gratuity, 1 00
" Mrs. Silas Moody, of Newbury, gratuity, 1 00
" Mary Raymond, of Beverly, gratuity, 1 00
" Amanda B. Nutter, of Wenham, gratuity, 1 00
" Hannah P. Dodge, of Beverly, gratuity, 1 00
" Mrs. E. A. Beckford, of Beverly, gratuity, 1 00
" Ann Dole, of West Newbury, gratuity, 1 00
" Mrs. McEwen, of Topsfield, gratuity, 1 00
" Mrs. M. Joplin, of Danvers, gratuity, 1 00
" Mary B. Hardy, of Bradford, for five Rug Mats, gratuity, 1 00
" Richard Jaques, of Newbury, for 1 piece home made Flannel, 2d premium, 2 00
" Mary S. Carlton, of N. Andover, for Woolen Hose, 1st premium, 2 00
" Mrs. Lucy Osgood, of Andover, for do. 2d premium, 1 00

John Clapp, Esq., of South Reading, presented some very handsome Stockings, but being made out of the County, we can only tender him our thanks for his interest in the prosperity of our Society.

Mrs. Hector Coffin, of Newbury, presented some very fine Stockings made by her while travelling in distant States, (for exhibition only.)

To Ruth Hood, of Topsfield, for knit Linen Gloves, 1 00
" Mrs. Lucy Osgood, of Andover, for piece Linen Diaper, 2d premium, 2 00
" Mrs. J. J. Abbot, of Andover, for five pair of mittens, 1 00
" Sarah G. Smith, of West Newbury, counter pane, 2d premium, 2 00
" Mrs. Mary A. Kilham, of Boxford, for Wrought Lace, a beautiful dress, first premium, 3 00

To Lucy P. Gould, of Topsfield, for Wrought Lace, 2d premium, $2 00
" Susan D. Smith, of W. Newbury, gratuity, 1 00
" Lucretia H. Brown, of Newburyport, do. 1 00
" Catherine A. Stevenson, of Danvers, do. 1 00
" H. Gerrish, of Newbury, wrought Muslin, 1 00
" C. Gerrish, of Newbury, do. do. 1 00
" Mrs. Sarah W. Osborne, of Danvers, do. 1 00

For work done by Children, under 12 years of age, exhibiting skill and industry.

To Lucy F. Kimball, Boxford, for Hearth Rug, bead and fancy work, 1st premium, $3 00
" Sarah Noyes Little, of Newbury, Counterpane, 2d premium, 2 00
" Sarah E. Meeder, of Boxford, gratuity, 1 00
" Louisa Page, of Danvers, for a horse net, 1 00
" Mary A. Bennet, of Beverly, Lamp Stand, 1 00
" Caroline E. B. Lovett, of Beverly, Cricket Cover, gratuity, 1 00
" Sarah Page, of Danvers, Cricket Cover, 1 00
" Caroline E. Page, of Danvers, 1 00
" Nancy Gardner, of Beverly, beautiful Bead Bag, gratuity. 1 00
" Mary A. Haskell, of do. Bead Bag, 1 00
" Charlotte Towne, Topsfield, Bead Chain, 1 00
" Ann Augusta Nourse, } " Hannah C. Nourse, } of Beverly, for Bead Covered Books, a gratuity, 1 00
" Margaret Wardwell, of Andover, for a box of Neck Stocks, a gratuity, 2 00

To Messrs. W. & M. Black, jr., of Danvers, for Goat and Sheep Skin Morocco, a gratuity, 3 00
" Benjamin Goodridge, of Danvers, for fine specimens of lining and binding Skins, gratuity. 2 00

To J. Kimball, of New Rowley, for Calf Skins and Chaise Leather, gratuity, $2 00
" Isaiah M. Small, Topsfield, Men's Shoes, gratuity, 1 00
" Edward S. Davis, of Lynn, Ladies' Slippers, gratuity, 1 00

The Committee have recommended these gratuities for the production of the above samples, of the manufacture of Leather, and they are decidedly of opinion that in a County so largely interested in this important branch of industy, specific premiums should be offered for its encouragement.

To Miss Hannah Foye, of Salem, for a Cape made of Milk weed, gratuity, 1 00
" Edward S. Davis, Esq. of Lynn, for handkerchiefs and other specimens of Silk manufactured by him, and colored by J. W. Halliday, of Lynn, gratuity, 5 00
" Joshua Tappan, of Newbury, for specimens of reeled Silk, gratuiy, 2 00
" William Tyler, Jr., of Boxford, for a Gig made by him without any instruction, and for a very superior Pegging Machine, gratuity, 5 00

In closing their report, the Committee would express the hope that on the next Anniversary of the Society, many ornamental and useful articles not entered the present year, will be presented, and that we shall have the pleasure of witnessing an exhibition that will honor the County and help to establish for its inhabitants a character for ingenuity, enterprise and industry.

Respectfully submitted,
For the Committee,
DANIEL P. KING.

Topsfield, Sept. 27, 1837.

ON CIDER.

The Committee appointed by the Trustees of the Essex Agricultural Society, on Cider presented for premium the present season, consisting of Amos Kimball, Andrew Dodge, John Northend, Charles Kimball and John Gage, Report :

That but one barrel of cider was entered for premium, which came within the rules prescribed by the Society, although there were two other barrels offered, but without any written statement respecting the process of making, managing, and keeping the same.

The barrel of cider offered by Mr. Towne, of Topsfield, was fair, sound, and of good quality, but by no means was it superior to what is denominated good cider in general. One of the barrels presented by Mr. Wm. Munday, of Topsfield, he said had been drawn from two barrels that had been frozen. The other barrel of Mr. Munday's was such as farmers usually denominate *good table cider*. Your Committee, therefore (though with much reluctance), are unitedly of the opinion, that neither parcel was entitled to the Society's liberal premium which was offered. Respectfully submitted.

AMOS. KIMBALL, Chairman.

Topsfield, Sept. 27, 1837.

ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams, have attended that duty, and Report :

That four teams only were entered for premium, viz: Perley Tapley, of Danvers, John J. Foster, of Andover, William Foster, 3d, of Andover, and John

Foster, of Andover. The lots contained one sixth of an acre each, land a gravelly loam, and were drawn for as follows, viz:

Lot No. 1, Perley Tapley, of Danvers.
" " 2, William Foster, of Andover.
" " 3, John J. Foster, of do.
" " 4, John Foster, of do.

No. 1, was ploughed in 37 minutes — 41 furrows,
" 2, " " " 40 " 41 "
" 3, " " " 36½ " 41 "
" 4, " " " 35 " 39 "

Lots No, 1, 2, and 3, were ploughed remarkably well, we think equal, if not superior, to any former year, and so near alike that it was difficult to decide which was entitled to the first premium; but after much deliberation they award —

To John Foster, of Andover, for lot No. 3, 1st premium, $12 00
" Perley Tapley, of Danvers, lot No. 1, 2d premium, 10 00
" Wm. Foster 3d, of Andover, lot No. 2, 3d premium, 8 00

There were four premiums offered, but the Committee were unanimously of opinion, that lot No. 4 was not sufficiently well ploughed to be entitled to a premium, as the rules of the Society require seven inches in depth, and this lot was ploughed but about five inches; and probably not for the want of skill in the ploughman or driver, but mostly, if not altogether, for the want of a good *plough*, well fitted with a good roller and cutter.

The Committee would further report, that a team of horses owned by Amos Sheldon, Esq., of Beverly, came on to the field and ploughed by the side of the double teams; lot same size, ploughed in 41 minutes; and although there is no premium offered

for ploughing with horses, the Committee, taking into consideration the extraordinary good management of the team, as well as the very superior ploughing, unanimously recommend a gratuity offour dollars to Mr. Sheldon, for his horse team.

All which is respectfully submitted.

DANIEL ADAMS, 3d,
Sept. 27, 1837. For the Committee.

ON PLOUGHING WITH SINGLE TEAMS.

The Committee on Ploughing with Single Teams, consisting of Erastus Ware, Ebenezer King, Jedediah H. Barker, Richard T. Jaques, and Moses Wildes, REPORT:

That there were eight teams entered for ploughing, though but seven came on the ground, each of which ploughed about one eighth of an acre, in the following manner:

John Foster, of Andover, drew and ploughed Lot No. 1, with 36 furrows, in 31 minutes.

" " 2, Augustus J. Esty, of Middleton, 35 furrows in 25 minutes.

" " 3, Jesse Estey, of do. 35 furrows in 26½ minutes.

" " 4, Daniel Putnam, of Danvers, 42 furrows in 31 minutes.

" " 5, Wm. H. Balch, of Topsfield, 40 furrows in 32 minutes.

" " 6, Moses Pettingill, of do. 40 furrows in 29 miutes.

" " 7, Perley Tapley, of Danvers, 39 furrows in 32 minutes.

All the teams driven by the ploughmen. The ground laid out was unfavorable for ploughing, by reason of the extreme drowth. Notwithstanding, the work was done generally in a workmanlike manner; so much so, that your Committee found it difficult to decide for the competitors. But after deliberate and careful examination, have unanimously agreed to award the premiums, as follows:

To A. J. Esty, of Middleton,	1st	premium,	$10 00
" Jessy Estey, of do.	2d	do.	8 00
" Perley Tapley, of Danvers,	3d	do.	6 00
" Moses Pettingill, Topsfield,	4th	do.	4 00

The ground was ploughed not less than five inches in depth, by the improved iron plough.

Respectfully submitted,

For the Committee,

ERASTUS WARE.

September 27, 1837.

ON FAT CATTLE.

The Committee on Fat Cattle, having attended to the duty assigned them, beg leave to submit the following REPORT:

The number of fat cattle exhibited to-day for premium and exhibition, were two yokes only, and those not of superior quality. The Committee very much regret to say, they were disappointed in not seeing a greater interest taken in this very important branch of husbandry, by the farmers of this County. Their

disappointment was somewhat increased by the fact, that a large number of cattle of superior quality, might have been exhibited, had their owners been sufficiently interested in the improvement and encouragement of a better quality of beef cattle. It may not be improper, perhaps, here to state a few facts which have come to the knowledge of the committee, for the purpose of showing what may be done by a very large portion of the farmers of this County.

Messrs. Benjamin and Samuel Foster, of Manchester, have each of them a small farm, and each of them keeps one yoke of oxen. These oxen are generally purchased when quite thin, or, as the phrase is, "in common working condition." They are used for all the purposes of the farm, there being no other team, not even a horse; and at the end of one year their value is increased from fifty to one hundred dollars per yoke, they weighing from twenty-two to twenty-six hundred pounds each. This increase of flesh is produced by hay and grass, without the aid of grain or roots. The grand secret of this improvement is, the extraordinary pains taken to cure their hay in the best manner, and the great care in keeping the cattle full fed, and in driving and loading them. There are many other farmers in the county, that deserve great credit for the management of their fat cattle; but still, the number is comparatively small, to what it might be. In regard to the breed of cattle, as far as the experience of the committee is concerned, it is confidently believed that what is called the "old fashioned cattle," are better calculated for the soil and climate of this county, than any breed yet introduced into it; and that the farmer of Essex county need not go beyond the limits of his own county to obtain a breed of cattle, if he will adopt the system of the Messrs. Foster, as well adapted to farming purposes as the world can produce.

After duly considering all the circumstances, the

committee recommend that the premiums be awarded, as follows:

To Ephraim Perkins, of Topsfield, for his brown ox, the 1st premium, $15 00

To B. W. Crowninshield, of Topsfield, for his two grey oxen, the second and third premiums of ten and five dollars, 15 00

All of which is respectfully submitted.

AMOS SHELDEN,
BENJAMIN WHEELER,
RICHARD ADAMS.

Sept. 27, 1837.

ON BULLS.

The Committee on Bulls Report:

That there were entered for premiums eleven Bulls.

They recommend the first premium to Paul Porter, for his large red bull, 4 years old, $10 00

The second premium to Isaac Osgood, for his red bull of 1 year and 5 months, 5 00

There were several others of promise, and good quality, particularly the Durham short horned bull, by B. W. Crowninshield, the grey bull, by S. Broadstreet, and the starred bull, by Amos King.

In offering their report, the Committee would take the opportunity to impress upon farmers the importance of paying more attention than they now do to the choice of Bulls. This is a subject upon which farmers are particularly negligent. They seem to think that unless they are going to raise their calves, it is of little consequence what kind of a bull they

employ. Yet both reason and experience teach, that the calves begotten by a large and well formed bull, are not only handsomer, but also larger, and more thriving, and therefore more valuable for every purpose, than those which are begotten by a stinted and feeble animal.

It is not necessary that we should here enumerate the signs by which a good bull is distinguished, as these are sufficiently known.

If farmers would only reserve their largest and handsomest calves for bulls, and rear them with proper care, they would soon find that they were amply repaid for all their attention and trouble.

Respectfully submitted by

JOSEPH KITTREDGE,
WM. THURLOW,
EZRA BATCHELDER,
EDWARD HOOD.

Sept. 27, 1837.

ON WORKING OXEN.

The Committee on Working Oxen, having attended to that duty, respectfully REPORT:

As oxen are generally used on the farms in this County, to do heavy and laborious work, in preference to horses, any improvement relating to, or in the breed of these most useful animals, we hail as very auspicious to the farmer. Your committee are therefore highly gratified with the exhibition in this department.

There were 19 pairs of oxen, of various and improved breeds, entered for the Society's premiums. We cannot discriminate with regard to the different breeds, as we have not the proper data before us.

The power and training of the several pairs were tested and highly satisfactory to the committee. — They recommend the premiums to be awarded as follows:

To Jedediah H. Barker,	1st premium,	$10 00
" Moses Pittengell,	2d "	7 00
" Perley Tapley,	3d "	5 00

Per order. H. OSGOOD.

Sept. 27, 1837.

ON STEERS AND CALVES.

The Committee on Steers and Calves Report — and recommend the following premiums:

To Joseph Kittredge, of Andover, for his red steers, 3 years old, the 1st premium, $7 00

To Jedediah H. Barker, of Andover, for one pair of his red steers, 2 years old, the 1st premium, 6 00

To Mr. Barker, also, for his other pair of red steers, 2 years old, the 2d premium, 4 00

To Samuel Groce, of Boxford, for his yearling steers, the 1st premium, 4 00

To Amos King, of Danvers, for his red heifer calf, 6 months old, the 1st premium, 3 00

To Daniel Putnam, of Danvers, for his heifer calf, 4 months and 3 weeks old, the 2d premium, 2 00

To Nathaniel Kelley, of Salem, for his red bull calf, 5 months old, the 1st prémium, $3 00

DANIEL PUTNAM,
EBEN. BERRY,
MATTHEW COX.

Sept. 27, 1837.

ON HORSES.

The Committee on Horses have attended to the duty assigned them, and ask leave to submit the following Report:

That the number of horses offered for premium, (coming within the rules of the Society) was five, and the committee unanimously recommend the awarding of the following premiums:

To Nathan Parsons, of Danvers, for his 3 year old horse, the Society's 1st premium, $10 00

To Perley Tapley, of Danvers, for his 5 year old sorrel horse, the 2d premium, 8 00

To Joseph Newell, of West Newbury, for his 4 year old horse, the 3d premium, 6 00

To Asa Brown, of Beverly, for his three year old horse, the 4th premium, 4 00

For the Committee.

HUBBARD EMERSON.

Sept. 27, 1837.

ON WHEAT AND OATS.

The Committee appointed to examine the claims for premium on the cultivation of Wheat, Rye and Oats, Report:

That claims for crops of oats, were presented by Richard Jaques, of Newbury, and Jedediah H. Bar-

ker, of Andover. Mr. Jaques raised about 37 bushels to the acre, and Mr. Barker 218 bushels on 5 acres.

As there was nothing extraordinary either in their *mode of cultivation*, or the *produce*, your committee do not feel justified in awarding a premium to either of the claimants.

Mr. Frederic Knight, of Newbury, presented a claim for Wheat, by which it appears that he raised 32 bushels 14 quarts, upon one acre. For this, we have awarded the Society's premium of ten dollars, and annex his statement.

Respectfully submitted.

JOHN KEELEY.

ABEL NICHOLS.

Sept. 27, 1837.

FREDERIC KNIGHT'S STATEMENT.

To the Committee on green Crops for the Essex Agricultural Society:

Gentlemen — The following is a statement of a piece of Wheat which I have raised the past season, and present to you for your premium. The soil is a yellow loam, and has been planted with corn and potatoes, alternately, for the last ten years, and manured in the hole with about seven loads a year. The past season there was no manure used. It was sowed with wheat the 10th of April, the seed was of the white kind. Two bushels was sown after steeping it in ashes and water 24 hours — it was spread on the floor 24 hours and dry ashes raked in for conveni-

ence of sowing. It was harvested the 15th of August, and produced 32 bushels and 14 quarts.

FREDERIC KNIGHT.

Newbury, Sept, 25, 1837.

This may certify, that I assisted in harvesting and measuring the crop, and the within statement is correct. GEORGE WOODMAN.

This may certify that I surveyed the ground cultivated with wheat the past season, by Mr. Knight, and there was an acre and no more.

TRISTRAM LITTLE, Surveyor.

N. B. The wheat was spread eight days upon the floor before it was measured.

ESSEX, ss. Sept. 25th, A. D. 1837. Personally appeared the above named Frederic Knight and Geo. Woodman, and made oath that the foregoing statements by them made, and subscribed thereunto, were true, before me, MOSES PETTINGELL,

Justice of the Peace.

ON THE DAIRY.

REED P. CLARK'S STATEMENT.

MR. PROCTOR — Dear Sir: At the requst of Mr. Colman, I send you a statement of the amount of Butter made from my cows this season, and also the mode of keeping the cows, which is as follows:

From five cows, commencing at June 3, till June 17,			68 lbs.
From June 17 till July 15, from	6	cows,	155 "
" July 15 till Aug. 12,	"		123 "
" Aug. 12 till Sept. 9,	"		130 "
" Sept. 9 till Oct. 7,	"		113 "

With regard to the manner in which the butter was made, the milk was set in tin pans in the cellar, where it remained six hours; then the cream was separated and placed in earthen pans upon the cellar floor, where it remained four or five days previous to churning. After pressing out the butter milk thoroughly, we added salt in proportion of one ounce to the pound. Taking care that every vessel used should be thoroughly scalded.

With regard to the manner of keeping my cows, their ages, &c., I have only to say that they were fed the past winter upon straw and salt hay, and in the spring on English hay — nothing more till the 20th of May; then they were turned out to feed upon grass and have been fed in no other way till the last of September. Since, I have given them some corn stalks as a substitute for grass. I have but one word to say with regard to the pasture where they were kept; that is, two thirds of the stock was too much for the feed, which can be seen by any person. As to the ages of the cows, three of them are as follows: one eleven, one eight, and one six; the other three, I am not able to say positive, but I should say seven, eight, and nine years old, and all native stock.

Yours truly, REED P. CLARK.

At a meeting of the Board of Trustees, December 29, 1837, the foregoing statement being laid before them, and it appearing not to have received the attention of the Committee on the day of Exhibition, by mistake, it was

Voted, That there be paid to Mr. Clark, a gratuity of ten dollars.

Attest, J. W. PROCTOR, Sec'ry.

ON FRUITS AND FLOWERS.

The Committee on Fruits and Flowers would REPORT:

That very few flowers were offered for exhibition. Those with which the dinner tables were decorated, came from the Preceptor and pupils of the Merrimac Academy, Bradford. The committee were much gratified with this present, and earnestly hope an example so good, may be followed by other institutions of a similar character; it being, in their opinion, highly desirable to develope in the young a taste for the beauties and wonders of creation, and to encourage them to devote a portion of their leisure hours to an amusement, at once so beautiful, innocent, and improving, as the cultivation of plants.

A greater variety of fruit was presented than has been noticed at any former exhibition. The committee will endeavor to name most if not all the specimens they were called upon to examine, for some of which they recommend the gratuities named below.

Pears and Apples.

Pears of a superior quality were offered by R. Manning, Salem; among which were Napoleon, Urbaniste St. Ghislain, Surpass Vergalieu, Marie Louise. The committe recommend to Mr. Manning a gratuity of $3 00.

Julienne, Valle Franche, Bartlett, offered by J. M. Ives, Salem. *Apples* from the same, Mela Carla, Porter, Wellington. For these and other fruit, the committee recommend to Mr. Ives a gratuity of $5 00.

Apples. Kilham Hill, Cloth of Gold, offered by Mr. Dodge, Wenham; Garden apples, from Luther Wallis, Beverly; Fine apples, from Edward Lander, Danvers.

Fine specimens of *Pears* were offered by Edward Lander, Danvers; a basket of superior Bartlett pears was presented to the committtee by Moses French, East Salisbury.

Grapes. Six varieties of very fine grapes, one bunch of which (Black Hamburgh) weighed two and a half pounds, were offered by David P. Harmon, Haverhill. The committee recommend that Mr. Harmon be presented with a copy of the Society's publications.

Plums, a good variety; among which were the Blue Imperatrice, late, and a great bearer; offeed by Mr. Ives, Salem.

Squashes. Three Vegetable Marrow (mixed), offered by by Moses Pettingell, Topsfield.

Three squashes, the seeds of which came from Buenos Ayres, were offered by Edward Lander, Danvers, to whom is recommended a gratuity of $1 00.

Malaga Squash, mixed with the Marrow, weighing 72 lbs., offered by Samuel Putnam, Danvers.

St. Vincent Squash, (entered as a Marrow,) offered by Wm. H. Balch, Topsfield, to whom the committee think a gratuity of 50 cents should be given.

True Marrow, by John M. Ives, Salem. Also, squashes, by Thos. Emerson, Topsfield; and two pumpkins, weighing 46 and 52 lbs. respectively.

Onions. A sample of very large onions was offered by John Torrey, Newbury; 200 bushles of which he states to have been raised on 52 rods of land. The committee recommend that a gratuity of $1 00, be awarded to Mr. Torrey.

French Sugar Beets, by John M. Ives, Salem, and Daniel P. King, Danvers.

Potatoes. Taylor's Forty-Fold, by J. M. Ives, Salem. English, and very large and fine Kidney, by E. Pope, Danvers.

Cucumbers (Early Southgate), were offered by J. M. Ives, Salem, which were well worthy of attention. Eighteen grew within the circumference of a bushel basket, averaging nine inches in length.

Corn. It was gratifying to see specimens of well ripened corn from J. F. Merriam, Moses Pettingell, and Joseph Averill, Topsfield, William Osborn, Lynn, and Benj. Goodrich, Danvers. G. W. Sawyer, Boxford, exhibited a sample of ripe corn, planted 3d day of June, without manure.

Respectfully submitted.

THOS. B. FOX,
G. B. PERRY,
J. H. DUNCAN,
} *Committee.*

STATEMENTS OF PRODUCE OF DAIRY.

EBENEZER KING'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

Gentlemen — I present for your inspection two firkins of Butter, made by my cows.

The firkin marked No. 1, contains 45 lbs., of butter made from the milk of one cow in the month of June. The firkin marked No. 2, contains 46 lbs., made from the milk of two cows during the past month, besides supplying a family, averaging eight persons, with milk.

The milk has been set in a cool cellar; has stood as long as it would keep sweet; the cream has been churned once a week, the buttermilk thoroughly worked out, the butter salted to the taste, put into the firkins, and kept covered with a strong pickle.

The yield of the two cows in July and August, was as good as in June and September. During the last month, they have had some top stalks.

Ebenezer King.

Danvers, Sept. 27, 1837.

ELIPLHALET EMERY'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

GENTLEMEN — Fourteen cows are kept, but generally five or six are kept in milk during the Winter. The dairy may therefore be considered equal to about nine cows, coming in about April, or the first of May. Commenced making new milk cheese the first day of July. In the fifty five days following, made about one thousand pounds. The rennet is put to the milk as soon as brought from the cows at night, and the same with the milk in the morning; the curd of the night being added before scalding. The quantity of rennet varies according to its strength, but generally about a table spoonful to three gallons of milk. Salted wholly in the curd, with a little less than one pint of fine bag salt to twenty gallons of milk. The milk of the dairy is generally sold from the first of December to nearly the last of May. In the month of June the milk is used for butter and two mealed cheese, as it also is for about a month after making new milk cheese; then, to about the first of December, it is wholly used for butter.

ELIPHALET EMERY.

West Newbury, Sept. 26, 1837.

ISAAC CARRUTH'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

GENTLEMEN — After the whey begins to appear, stir it carefully, let it remain until it settles, then dip it into a basket to drain. When the whey is sufficiently pressed out, cut it into pieces about as large as dice, put it into warm whey and let it stand about ten

minutes, then add two gills of salt. When sufficiently pressed, put them into a cheese room and turn them and butter them once a day.

ISAAC CARRUTH.

Andover, Sept. 27, 1837.

JACOB OSGOOD'S STATEMENT.

To the Committe on the Dairy:

GENTLEMEN — The cheese I present for your examination was made from the milk of 4 cows. Six gave milk during the time of making new milk cheese. We use the milk of two cows in the family. Their feeding was grass only. Weight of new milk cheese made from the 10th of July to the 10th of August, 350 lbs. The process of making and preserving the cheese is much the same as has been formerly named. Respectfully yours,

JACOB OSGOOD.

Andover, Sept. 24th, 1837.

DANIEL PUTNAM'S STATEMENT.

To the Committee of the Essex Agricultural Society on the Dairy:

GENTLEMEN — I offer for premium 37 lbs. of butter, made from one cow in four weeks, immediately preceding the 7th of July. The cow is offered for premium to-day, and may be seen at the pens.

The milk is kept in tin pans in a cool room, and the cream taken off in 36 or 48 hours after the milk is set. The cream is put into pots and stirred daily.

After being churned, the butter milk is drawn from the churn and pure cold water is twice poured upon the butter, which is slightly churned while the water is upon it. After drawing off the water, the butter is taken from the churn — salt is worked into it in the proportion of an ounce to a pound. Twenty-four hours after, it is well worked over, all the buttermilk removed, and then put down in a common butter firkin. A little fine salt is spread over each weekly layer.

DANIEL PUTNAM.

Danvers, Sept. 27, 1837.

CULTIVATION OF ROOT CROPS.

Haverhill, January, 1838.

JOHN W. PROCTOR, Esq.

Dear Sir — Knowing Mr. Keely to be a judicious and successful cultivator of Root Crops, I requested him to furnish for our Transactions an account of his mode of cultivation. In compliance with my request he gave me the following communication, but not in time to be published in the Transactions of the Society for 1836. I therefore send it to you for publication in the Transactions for 1837, in the hope that it may excite the farmers of Essex to the more extensive cultivation of these valuable crops.

Very respectfully yours,
J. H. DUNCAN.

To the President of the Essex Agricultural Society:

DEAR SIR — I feel considerable difficulty in complying with the request which you were pleased to

make recently in conversation, arising from a doubt of my own ability to furnish any thing which may be worthy of your attention. But two considerations have induced me to overcome this feeling; 1st, I am aware that, if what I communicate is not in itself of much importance, yet it may be the means of suggesting some hints which may be productive of benefit to the community; and 2d, if professional gentlemen, whose talents and wealth have placed them far above dependence upon the pecuniary advantage resulting from agricultural pursuits, are willing to give not only their influence, but to some extent their time and property also, to advance the interest of the agricultural part of the community, they have a right to expect that those whose whole time is devoted to practical agriculture, will, when required, furnish such facts and observations as may be made serviceable to the public.

The present state of society requires all the efforts both of scientific and practical agriculturalists, to enable the farmer to advance with the rest of the community. Manufactures, the construction of railroads, &c., have so raised the price of labor, and such is the competition in the market, owing to the great and increasing facilities for internal communication, that we must either abandon our farms entirely, or apply to them the same enterprize and ingenuity which is carrying the other departments of society so rapidly forward.

I have thought the advantages resulting from the cultivation of roots, have been, and still are very much underrated, notwithstanding all that has been written upon the subject. Perhaps the principal reason why farmers so generally neglect this part of agriculture is, because the statements are supposed to be made by individuals who have attained large crops by excessive manuring and very expensive cultivation, and of course such as practical farmers generally *can-*

not afford to raise. Now undoubtedly it is often the case, that enormous crops are obtained at a ruinous expense, but the experience which I have had in raising roots (I refer principally to Mangel Wurtzel and Swedish Turnips) has convinced me that *enormous profits* may be obtained at a *moderate expense.*

I have raised upon a small spot of land highly cultivated and in a favorable season, at the rate of 38 tons per acre. But such crops are not to be expected except from a soil very suitable for their production, and highly manured. I will therefore, base the estimate I am about to make, upon a crop which I find by reference to memoranda, was raised in the year 1828. I refer to this crop because it was one on which I bestowed no extraordinary quantity of manure, labor, or skill. It was such as I confidently believe might be obtained from a considerable part of the cultivated land in this County, and with very little more expense than is now bestowed upon a corn or potato field. I find there was rather less than one fifth of an acre of land, one cord of manure was applied, and the land was in no better state in any respect, than such as a farmer might expect would yield 40 bushels of Indian corn per acre. The produce was estimated to be 4 tons. A bushel will weigh somewhat over 50 lbs. This crop, therefore, would be in round numbers 1000 *bushels per acre.*

The value of an acre of corn yielding 40 bushels, estimating the corn at one dollar per bushel, and the fodder at $15, will be $55; and estimating a bushel of Mangel Wurtzels to be worth only one fifth of a bushel of corn, an acre of Mangel Wurtzels (1000 bushels) will be worth $200. But the leaves which might be gathered together with the thinnings, if judiciously used, would be worth, at the least, an acre of corn fodder. This will make the gross sum $215. From this sum deduct enough to pay for the extra expense of cultivating this crop, say $10, and there

will remain $205; a balance of $150 in favor of Mangel Wurtzels, and without making any allowance for the superior condition in which the land would be for a succeeding crop. But the value of roots does not depend merely upon the common amount of produce. As an article of food for cattle or swine, they are very valuable as well as very cheap. On a farm profitably managed, there always will be a considerable quantity of ordinary fodder which is too valuable to be wasted, but which does not contain nourishment sufficient to sustain cattle in good flesh. While eating this, they need some nutritious food to supply the deficiency — roots are just the article necessary.

The great expense of providing food for cattle, is not the only disadvantage resulting from our tedious winters. Six months is too long a period to keep cattle entirely confined to dry fodder. Without some change, it is difficult to prevent their losing flesh; and indeed for a few weeks before turning to pasture, this will be the case more or less. This is quite a serious evil with cows which calve early in the season. They become dainty, just when they require an additional quantity of food. Milch cows are thus injured for the whole season, to the great damage of their owners. For although their milk will increase when they are turned to pasture, it never will be so abundant as it would have been had the cows been supplied with suitable food before they were turned out. Now an abundant supply of roots will enable the farmer to consume all his ordinary fodder without injuring his cattle in growth or flesh, to keep them in good health and to prevent his milch cows from being partially dried before they are turned to pasture.

In these unkindly seasons it is no small recommendation to say truly of a crop, that it is a sure one. So far as the seasons are concerned, this may be said with respect to Mangel Wurtzels. If the land is suit-

able and well manured, and the plants properly cultivated after they are up, the coldness of seasons like the past, will not injure their growth at all, so far as I can judge. They are not liable to be cut off in the Spring like corn, nor to be injured in the Fall like both corn and potatoes. Late in the season I have left them out during frosts so severe that they could not be taken out of the ground without breaking them, and yet they have suffered no injury. The only uncertainty which merits such an appellation, is in consequence of the seed failing. But this can be remedied by procuring plants in the neighborhood, if they can be obtained, and if not, even from a considerable distance. When the seed comes up well, there always will be a large quantity of plants which must be thinned out early, or the crop will suffer. These set out carefully in wet weather, will be as certain to live as cabbage or Swedish turnip plants. But if plants sufficient to occupy the ground cannot be procured, then as a second resort, at the suitable time, sow the vacancies with Swedish turnips. The preparation of land for Mangel Wuztzels will precisely suit the Swedish turnips; and these, though not so productive as the former, will prove a valuable substitute.

I can speak positively of the advantage of this course, for I have tried it repeatedly. The last season I prepared one quarter of an acre of land with great care, for Mangel Wurtzels. Owing to the drought, I suppose, not more than fifty plants came up. From about a mile distant I procured plants, sufficient to raise 80 bushels. At the beginning of July I sowed Swedish turnips in the vacancies, and harvested about 80 bushels of these also. Not more than one quarter part of the land was occupied with the Mangel Wurtzels. And in addition to these, the thinnings, with the wash from the house, and the stale milk from two cows, furnished food sufficient to keep

five swine in very thriving condition, from the time of the first thinnings until early in the fall — one of them gained as much as fifty pounds on this keep.

I have already taxed your patience too much, or, as additional advantages to be derived, might be mentioned, the value of this crop as a thorough cleansing and enriching one, as one which returns to the soil more than any other, as a valuable crop in rotation, and also as more than any other illustrating the superior advantages resulting from high cultivation.

It would seem that the advantages to be derived, might be sufficient to induce the universal cultivation of Mangel Wurtzel by farmers, for their own use. But it seems our legislature has given its recommendation to the projectof raising beets for the purpose of manufacturing sugar. This will be an additional inducement to this part of husbandry, and it certainly becomes farmers generally, to lay aside their prejudices and cavils, and to acquaint themselves immediately with the process of cultivation necessary. Then if it should prove successful, they will be prepared to enter upon it, without having the mortification of seeing mere speculators take all the profits of a business which naturally belongs to the cultivators of the soil.

The soil most suitable for the production of the Mangel Wurtzel, or any other variety of the beet, is a loam, rather dry than otherwise, the richer the better. A sandy or even a gravelly soil will do, if it be made rich and is well stirred frequently. But I suppose on a wet, clayey, or a baking soil, they would fail altogether. I believe it is generally recommended to raise them on the level ground, the same as the common beets are usually raised in gardens. When the soil is very deep and rich, perhaps this will be the most economical way. I have practised ridging and prefer it for two reasons: 1st, you get twice the depth of soil beneath the plants, and

2d, the manure may thus be brought into the immediate vicinity of the plants. Now these objects are important, when the soil is both thin and poor, as is the case with too much of our land. I am aware that the notion is almost universally prevalent, that if *roots* are allowed to come in contact with unrotted manure, they will become scabby and be injured. This I believe is a groundless prejudice, something like cows being spoiled by being kept fat, or in consequence of being allowed to eat apples, &c. I have, for more than ten years, seen roots of all kinds manured with unfermented manure, but I have never discovered that they were injured in the slightest degree, but on the contrary the crop has always been better as more manure was applied.

There are two ways of rigding, both of which I have found to succeed. 1st, Let the land be ploughed and harrowed, and then with a light plough draw furrows, 28 or 30 inches asunder. Into these furrows put the manure. Then plough on each side towards this furrow, and thus form a ridge over the manure. These ridges may be flattened by passing a light roll over them lengthwise, or by cutting down the top with a hoe, leaving the ridge about 10 or 12 inches wide. This way I prefer, when I have but little manure and wish to make the most of it. The other I suppose to leave the land in the best state for a successful crop. It is the following: Spread the manure upon the land and plough it in as usual; harrow it well to pulverize the soil and mix the manure; then form the ridges by ploughing two furrows towards each other, and flatten them as before. The best method of opening the ground for the seed is by means of a broad wheel or shafts like a wheel barrow, with a triangular rim round the circumference. This passed along the ridge, will open a groove of even depth, into which the seed may be dropped two or three inches apart. The seed may be sown from

the beginning of May until the close of June. Such seasons as the last, the middle of May is quite late enough. Soon after the plants are up, they will require to be weeded and thinned, leaving them two or three inches asunder. They may be thinned afterwards, as they may be wanted for transplanting, feeding swine, &c., until they are about one foot apart in the row. If the soil is good and they do well, this will be found to be quite near enough. The top of the ridges will require to be hoed three or four times, the oftener the better; but the *sides* may be cleared by turning them into the hollows between the ridges, with a single horse plough. Let them lie thus until the weeds have become smothered, and then plough them up again. It will be found that this operation will effectually destroy all the weeds. The Swedish turnip (which is near the same as the ruta baga), is cultivated in much the same manner as the Mangel Wurtzel, only they must be sown later—at the close of June or beginning of July. I have found that if they are sown earlier, they are liable at the close of the season to be taken by a small fly, or louse, which causes them to decay at the top, and their decay will continue after they are put into the cellar or pit. They may also be raised on a soil which is too light and sandy for the Mangel Wurtzel; but like the Mangel Wurtzel, will do much the best on very rich soils.

I have prolonged this communication much beyond what I at first intended, but such as it is, I leave it entirely at your disposal,

And remain with much esteem,

Respectfully yours,

JOHN KEELY.

Hon. J. H. Duncan.

COMMUNICATION FROM MR. KEELY, ON WHEAT.

Wheat, in this country, is usually an uncertain crop, but this season it has been, generally, little better than a failure. To point out the causes, and a remedy for this uncertainty, is a subject of sufficient importance to merit the attention of our best scientific agriculturalists, and will not now be attempted. A few suggestions, however, will not, perhaps, be deemed impertinent.

It is well known that much of the land in the long settled parts of New England which is now considered unsuitable for wheat, has become so under the exhausting system of cultivation which has been pursued. Once, wheat was a profitable and tolerably sure crop, as it is now in similar soils and climate where the same system either has not been adopted, or has not been in progress long enough to produce its mischievous effects. If it be asked, what is there so injurious in the system of cultivation under which our soil has so greatly deteriorated, it is replied that among other things, one of its most prominent features will be found to be *an almost entire neglect of the principles of rotation, or even of alternation of crops.* Continual crops of either wheat, corn, oats, rye or grass, constituted the series; for potatoes are comparatively a new article, at least to any extent. Grass for mowing, is generally allowed to stand until the seeds are formed, and in many instances, to become nearly ripe before it is cut. Now under this management, there is very little *alternation* ever. These plants are all *culmiferous*, and all, with the exception of grass, *farinaceous*, as they are all suffered to produce seed, tend to exhaust the soil of nearly the same quality, and that without any alleviation.

With respect to a remedy for the evil, it is remarked, that the application of large quantities of animal

manure, though it would very much increase the fertility of the soil generally, yet if applied directly to a crop of wheat, would be found to be positively injurious. And further, on soil which is much enriched in this way, wheat is considered to be exceedingly liable to rust or blight. And too, our resources for thus enriching the soil are too small to practice it universally.

The application of lime in large quantities would probably enable us to raise wheat; but this, on the other hand, would tend very fast to reduce the fertility of the soil yet further, except sustained by the use of large quanties of other manure; for on our light soil, the vegetable matter, on which the lime acts, and which it converts into immediate nourishment, is already too small, and needs to be increased.

If this view of the subject be correct, instead of taxing our ingenuity for the purpose of devising ways to obtain large crops of grain for the purpose of sale or for feeding animals, we should introduce without any further delay, a judicious system of alternation of crops, embracing *roots and leguminous plants;* and thus by gradually enriching the soil, without exhausting it of one specific quality, we shall, perhaps, sooner than in any other manner, restore our worn out soil to its original fertility.

Let us for a moment imagine that instead of the system complained of, potatoes, ruta baga, mangel wurtzel, carrots, &c., had been raised in quantities sufficient (with some grain, perhaps,) to fatten all the cattle that have been fattened on grain exclusively — that clover, lucerne, &c., had been judiciously, alternated with the grasses, and that the immense quantities of manure which would then have been furnished had been properly applied — and can it be supposed that our soil would then have been in its present destitute condition? It is not asserted that under such management our soil would at this time

be what is called a good wheat soil, though it is believed that it would have been at least capable of producing a good crop of wheat, and with tolerable certainty. And with respect to other grain, no one will doubt that the same quantity which is now raised, might in the case supposed, be raised on one half or even one third of the land which is now requisite to produce it.

The diseases to which grain, particularly wheat, is subject, are smut, and rust or blight. In addition to these, there has recently appeared an insect which threatens to be destructive, but of this we are yet comparatively ignorant.

The smut, whether a disease or an animalculæ, is found to be propagated with the seed, and may be entirely destroyed by the application of new ashes, or caustic lime, to the seed.

There are some statements made upon good authority, with respect to a species of wheat (Siberian), which indicate that, like a species of oats now common among us, it is not liable to rust. If upon further trial this should be found to be a fact, it will be a very important one. One of your committee was assured, upon the authority of Mr. Colman, that a rope drawn over a field of standing wheat several successive mornings, at a time when wheat was rusting, particularly after cold foggy nights, removed or prevented the rust, so that a large crop of plump, heavy wheat was obtained, while an adjoining piece, exactly similarly situated in every respect, but over which the rope was not drawn, was rendered worthless by the rust. This, if confirmed, (and every one can try an experiment so simple), will be an important fact, and equally applicable to other grain besides wheat. Respectfully submitted.

JOHN KEELY.

December, 1837.

ON IMPROVEMENT OF LIVE STOCK.

To the President of the Essex Agricultural Society:

My Dear Sir — I lay before you the following, not from an opinion of my competency to inform the public, but purely out of deference to yourself. You requested me to write upon some subject. I have fixed upon the following, and submit what I have written to your judgment. If you deem it worthy of insertion among the annual doings of the Society, you have my consent; if you think otherwise, you have my concurrence.

I am ever yours, obliged,

GEORGE KEELY.

To Hon. J. H. Duncan.

The improvement of Neat Stock is to the dairy farmer of great importance. Something has been done already in this department of rural economy, but yet there is room for further progress, and more attention. Cattle of a superior breed have been imported, but this, without skillful attention, will avail but little. After a few generations of them have passed, there will be a danger of their deteriorating, and becoming of no more value than our native stock. Those imported from foreign countries have, by superior skill and great attention, been brought to what they are, and the same skill and attention will be necessary to keep up their value.

There is one fact, if I mistake not, in the physiology of animal nature, which is frequently overlooked; namely, the perpetuation of a good breed depends more upon the choice of a sire, than the dam. I do not recollect that I have seen a bull in this County,

to which, if I had a large dairy, and was anxious to make it profitable, I should be willing to send a cow from which I calculated to increase my stock. There are such, probably, which I have not seen.

I will endeavor to describe such an animal as I should like to see. A small, clear head; small straight ears, thin, not loaded with hairs, rather inclined to be erect; a full, clear, mild eye, mild rather than bright; a short clear neck, full where it joins the shoulders; a bold, full, capacious chest, and deep from the risen to the dew-lap; a straight back and broad, and the sides of the spine well filled with muscle; the tail small round, with fine, short hairs, well set where it joins the spine, not rising there with a bunch, and at its lower end a bunch of strong hair, like that upon a lion's tail, and the more of these the better; the haunch compact, with well defined muscles; the barrel straight, and smaller behind, not deep; legs short and slender, the animal standing higher before than behind; the color would be of no importance, except it could be a light dun, which generally indicates a fine constitution, and kindly temper. To such an animal turn a good cow, of quiet habits, and there will be almost a certainty of a valuable calf.

It is generally the case, that the best breeds of animals for the dairy, are not the most profitable for slaughter; nor will those which are the most profitable for slaughter, produce the best stock for working. The Devon have been imported, and perhaps none will surpass them for utility at labor. There are heavier breeds, but none equal them for strength in proportion to their weight, endurance of toil, and speed in travelling. Their bone is rather small, but they are well clothed with muscle, and the vigor of an animal lies more in its muscles than its bones.

Leicestershire was the native county of the celebrated Bakewell. It is naturally a grazing country. He improved the Leicester neat cattle, and made

them about the best for slaughter of any, but they are not good for the dairy, nor would they be profitable for labor.

From my personal acquaintance with great breeders of stock, who were trained under his immediate direction, I know that his and their dependance for success was greatly placed upon the male. If these were superior, they felt confident of success. A friend of mine used to keep fifteen tups,* which he let out at ten guineas a piece, per annum. Other male stock were in proportion, and to have them of superior quality, was a most fortunate circumstance for a farmer.

To know the best form for a bull, or any other male animal for breeding, is a fortunate acquisition to the farmer. Gentlemen of the most patient observation and attentive memories, may see them described in writing, or in types of their form and proportions, and yet may mistake. To notice them frequently beside of inferior animals; to go round them, feel them, if neat cattle, in the flank, ribs, and especially in the back, and loins, whether they be broad, and well filled up on each side of the spine, is the best way to inform the mind and direct the judgment. If a few of our young gentlemen farmers would make this their recreation a few days in each year, by travelling round where good stock is kept, they would be amply compensated by the improvements on their own farms, beside rendering immense advantages to this country.

There is a difficulty in procuring and keeping such animals. Our daries are all small. When a farmer keeps from thirty to sixty cows, he provides his male for himself; but generally we cannot do so. Those who keep the best cows have the fewest of them, and

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The word tup is used in some of the districts in England as synonymous with *ram*.—Ed.

would object to the expense. There are, however, two ways of meeting this difficulty. First, if a gentleman of fortune, good judgment and public spirit, would be at the trouble to procure such an animal, he might charge a double or a treble fee for turning a cow to him. This would lighten his expense, and all those who knew their own interest would be glad to pay, and to drive their cows a considerable distance to avail themselves of the advantage. Or a number of persons might join, and hold such a beast as common stock, for their own use, and for those, who wished for the opportunity of raising good calves. The same might be done in regard to the best cows and the best tups. Such a course might tend to improve our stock where no one could well spare the capital to improve his own; but I fear our labors will be in vain, till more attention is paid to the male animal.

A STATEMENT OF THE FUNDS OF THE ESSEX AGRICULTURAL SOCIETY.

DECEMBER 29, 1837.

19	Shares in the	Warren Bank, Danvers,	$1900	00
5	" "	Village Bank, "	500	00
11	" "	Commercial Bank, Salem,	733	33
6	" "	Merchants " "	600	00
12	" "	Exchange " "	800	00
3	" "	Salem " "	300	00
7	" "	Mercantile " "	700	00
Amount in the Institution for Savings, (with the interest accrued since last year,)			670	14
Note of J. Shove and B. Goodridge, and int.			337	70
Note of " " "			102	58
Cash on Deposit in Warren Bank, on interest,			562	42
		Total,	$7206	17

The expenses for the year 1837, are estimated at $700 00

The income for the year 1837 is estimated at $893 75

It is believed that the cash on hand is sufficient to meet all out-standing demands.

A. NICHOLS, *Treasurer.*

Dr. *Esssex Agricultural Society, in Account with Andrew Nichols, Treasurer.* *Cr.*

1837.			1837.		
	Paid Premiums awarded in 1836,	$ 66 00	January 1.	By Balance on Settlement for 1836,	$172 70
	Paid " " " 1837,	280 00	April.	By Dividends on Bank Stock,	159 00
	Paid Bills of 1836,	183 13	Sept. 1.	By C. Derby's Note and interest,	26 85
			October 6.	By Dividends on Bank Stock,	121 00
				By Cash of Jesse Sheldon, as member,	3 00
				" Edw. S. Davis, "	3 00
				" John S. Foster, "	3 00
				" Eben'r. G. Berry, "	3 00
Dec. 29.	Balance Cash in the Treasury,	562 42	December.	By Bounty from the State,	600 00
		$1091 55			$1091 55

Errors excepted.

ANDREW NICHOLS, *Treasurer.*

DANVERS, December 29, 1837.

At a Meeting of the Board of Trustees, December 29, 1837, the foregoing statement, submitted by the Treasurer, was referred to Messrs. Duncan, Howes, and King, to examine the vouchers therefor, and report thereon to the Secretary, to be published in the Transactions of the year. Attest, JOHN W. PROCTOR, *Secretary.*

The Committee above-named have examined the vouchers of the foregoing Account, and find them to be correct.

F. HOWES,
J. H. DUNCAN, } *Committee.*

ORIGINAL HYMN,

WRITTEN FOR THE ANNIVERSARY IN 1837.

Father, like an altar fire,
Let our grateful thanks arise,
Tune our hearts, our souls inspire;
Hear us in the open skies.

Hear us while we bless thy care,
For the soil we love to till,
For each mead and pasture fair,
For the forest and the hill;

For the field of ripened grain,
Falling 'neath the sickle's gleam,
For the cultivated plain,
For the fertilizing stream.

For the lowing herds that graze
On each free New-England plain,
For the cheerful wood-fire's blaze,
For love's welcome evening strain.

For the promise, thou hast given,
Of a seed and harvest-time:
'Tis a promise firm as heaven—
Sweet to us as music's chime.

For thy shielding wing of grace,
O'er our happy homes outspread,
For each high and hallow'd place
Where our Sabbath prayers are said.

For the noble path we tread,
Where we see thy works abroad—
May we be by wisdom led,
And our souls be thine, oh God.

SONG,

Written for the Celebration of the Essex Agricltutural Society,

By ALONZO LEWIS.

I.

We'll not rail at this world, 'tis a good one and true,
As the great God who wrought for our happiness knew;
He bade the first Farmer to till the rude ground,
And that curse has the greatest of blessings been found!
The wisest of men since that day spent his time
In searching the plants and the fruits of each clime;
He knew each green thing upon mountain and lea,
From the hyssop's bright plant to the cedar's fair tree.
We'll not rail at this world, &c.

II.

Such was the delight of our Fathers of yore,
When they cross'd the dark waves to this beautiful shore,
And the trees of our Winthrops and Endicotts stand,
In their beauty, like spirits to guard our fair land!
When the First of our clime had ensheathed his bright sword,
Mid the plaudits of millions for Freedom restor'd,
He climb'd not a throne, bidding minions to bow,
But left the world's van, and went home to his plough!
We'll not rail at this world, &c.

III.

View this fairest of lands that is warmed by the sun,
And see what the hands of the Farmers have done!
They have humbled the forest, and cleft the cold sod,
And it now yields its tributes to man and to God!
Unlike many others, the fruits they produce,
Are conducive to health, and are always of use.

The merchant may draw on his bank for his spoil,
But the farmer draws wealth from the Banks of his soil.
We'll not rail at this world, &c.

IV.

Our song may be homely, but then we all know
There are many dear things which that sweet word can show,
And let earth's fairest clime produce spirits more fair
Than preside o'er our *homes* and make happiness there!
May the Farmers of Essex forever be found,
With the First of our Country in tilling the ground,
And when we have done with the plough and the sod,
May we all gather fruit in "the Garden of God"!
We'll not rail at this world, &c.

PREMIUMS OFFERED

BY

THE ESSEX AGRICULTURAL SOCIETY.

1838.

I. MANAGEMENT OF FARMS.

For improvement and skill, in the management of a farm, taking into view the lands, stock, produce, &c., with all its appendages:

The best,	thirty dollars.
" second,	twenty-five dollars.
" third,	twenty dollars.
" fourth,	fifteen dollars.

REMARKS.

Notice of intention to claim these premiums, must be given to the Secretary, or the Chairman of the Committee, on or before the 20th of June, the present year.

The Committee will examine the farms that may be entered, about the 1st of July and the 1st of September.

An accurate description of the farm, and statement of the crops and produce, &c., will be required to be furnished by the claimants to the Secretary, previous to the 1st of December.

Farmers will bear in mind that these premiums are not offered for the largest number of acres, or to the

wealthiest owner, but to him who improves in the best manner what he has, whether it be *one* or *ten*, and offers the best example for imitation.

The Committee to view the present year, are

AMOS SHELDON, *of Beverly*,
ELIPHALET EMERY, *of West Newbury*.
THOMAS WEST, 2d, *of Haverhill*.
JAMES STEVENS, Jr, *of Andover*.
PICKERING DODGE, *of Salem*,
EBENEZER KING, *of Danvers*,
JOHN W. PROCTOR, *of Danvers*.

II. DAIRY.

1. For the best butter produced on any farm within the county, from the 1st of June to the 9th of July, inclusive, in the present year, a sample of which, not less than twenty-five pounds, to be exhibited, with a particular statement of the method of making and preserving the same, eight dollars.
For the second best, six dollars.
For the third best, four dollars.

2. For the best produce of butter, on any farm within the county, in the four months next following the twentieth of May, the present year — a sample of not less than twenty-five pounds of this butter to be exhibited at the anniversary of the Society — *quality*, as well as *quantity*, to be taken into view, with a satisfactory account of the manner in which the cows have been fed, and the general management of the milk and butter, twelve dollars.
For the second best, eight dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county, in the months of *July*,

August and *September*, in the present year, a sample of which, not less than fifty pounds, to be exhibited,
ten dollars.
For the second best, eight dollars.

III. TURNING IN GREEN CROPS AS A MANURE.

For the most satisfactory experiment of turning in green crops as a manure, on not less than one acre of land, a detailed account of the whole process to be given in writing, twenty dollars.
For the second best, ten dollars.

IV. FOREST TREES.

1. For the best plantation of *either* of the following species of Forest Trees, viz: *White Oak*, *Yellow Oak*, *Locust*, *Larch*, *White Ash*, *Maple*, or *Walnut*, in the third year of their growth, and not less than one thousand trees, twenty dollars.
2. For the best do. do. do. not less than six hundred trees, twelve dollars.
3. For the best do. do. do. not less than four hundred trees, eight dollars.

REMARKS.

To encourage the cultivation of Forest Trees, and to induce our farmers, if possible, to make experiments therein, it is allowed that the trees may be raised from the seed, or transplanted from the forest, and that they may be set on one or more parcels of land on the farms of the claimants, or in ornamental rows about the farms. The number of trees, and the thrift and vigor of growth will be regarded more than

their position; always understanding them to be placed where it is designed they shall continue to grow. If raised from the seed, the third year of their growth will be the time for examination. If taken from the forest, the third year after being transplanted will be the time for examination. If any person now has trees growing that will answer this description, they may be the subject of premium, as well as those which may hereafter be cultivated for this purpose.

Notice of intention to claim any of these premiums must be given to the Secretary of the Society, on or before the 15th of June, in the year in which the claim is made.

The Committee on this subject, are

JAMES H. DUNCAN, *of Haverhill.*
ANDREW NICHOLS, *of Danvers.*
GARDNER B. PERRY, *of Bradford.*
PICKERING DODGE, *of Salem.*
NATHAN WEBSTER, *of Haverhill.*
JEREMIAH SPOFFORD, *of Bradford.*
EDWARD FORD, *of Beverly.*

V. CULTIVATION OF MULBERRY TREES, SILK, &c.

1. For the best plantation of Mulberry Trees, adapted to the production of Silk, not less than half an acre, twenty-five dollars.
For the second best, twenty dollars.

2. For the best nursery of Mulberry Trees, adapted to the production of Silk, not exceeding two years growth, twenty dollars.
For the second best, ten dollars.

3. For the best specimen of Silk, produced and reeled within the County, not less than one pound, seven dollars.
For the second best, five dollars.

4. For the most valuable production of Silk, by the enterprise of one family, to be exhibited either in cocoons, reeled, or manufactured, seven dollars.

☞ The same parcel is not to be entitled to more than one premium.

REMARKS.

If any person shall have commenced experiments in reference to the premiums heretofore offered, their claims may be presented, although those offers are not now repeated.

All applications for these premiums must be accompanied with statements in detail, of the entire management and expense relating to the same.

Information as to the kind of trees, and the manner of their cultivation, best adapted to our climate, is particularly desired.

The results of any experiments on this subject, although not particularly within the description for which premiums are offered, would be acceptable to the committee; and if meritorious, rewarded with a corresponding gratuity.

VI. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, twelve dollars.

For the second best, eight dollars.

VII. IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in improving wet meadow or swamp lands, and bringing the same

into a condition to produce a valuable crop — with a detailed statement of the means used, and the expenses, &c. &c., twenty dollars.

For the second best, ten dollars.

These premiums will be paid whenever satisfactory claims shall be presented.

VIII. PLOUGHING.

I. DOUBLE TEAMS.

For the best performance in Ploughing, twelve dollars.

" the second, ten "

" the third, eight "

" the fourth, six "

II SINGLE TEAMS.

For the best performance in Ploughing, ten dollars.

" the second, eight "

" the third, six "

" the fourth, four "

REMARKS.

Double teams will be required to plough not less than one sixth of an acre, and single teams not less than one eighth of an acre. Double teams not less than *seven* inches deep; single teams not less than *five* inches deep. The plough must be of the best construction, the furrows truly cut, and well turned; the whole must be done in a workmanlike manner. So many premiums have already been awarded for ploughing, and so great have been the improvements in the construction of ploughs, that nothing less than the best work will be satisfactory. Those who intend to be competitors in the ploughing match, must

give notice to the Secretary, on or before the Monday previous to the exhibition. Persons residing more than ten miles from the place of exhibition, can have their teams, intended to be used in the field, fed at the expense of the Society, the night previous.

IX. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show, any new or improved agricultural implement, the invention being his own, which shall in the opinion of the Trustees merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

X. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used for the cattle, as compared with English hay, with a detailed account of the fodder used, and the expense of raising the same; the experiment to be made in the three winter months, twenty dollars.

For the second best, fifteen dollars.

For the third best ten dollars.

These premiums are offered, to be paid whenever a meritorious claim is presented to the Trustees, and will be continued for three years.

XI. EXPERIMENTS ON MANURES.

For any well conducted and decisive experiment in the use of marl, peat, lime, gypsum, ashes of wood, peat, or coal, as manure, in the improvement of land, with full accounts of its management and results, twenty dollars.

For the next best experiment, ten dollars.

XII. FATTENING CATTLE OR SWINE.

1. For the most satisfactory experiment in feeding cattle or swine upon apples, with a statement in detail of the process and the results, fifteen dollars.

For the second, ten dollars.

2. For any well conducted and exact experiment in fattening swine, ten dollars.

XIII. IMPROVEMENT OF SHEEP, &c.

1. For the introduction within the county of an improved breed of sheep, not less than ten in number, adapted to the two purposes of wool and mutton, ten dollars.

2. For the best experiment in fattening wethers for the market, not less than ten in number, ten dollars.

3. For the best experiment in raising early lambs for the market, not less than ten in number, ten dollars.

XIV. CIDER.

For the best barrel of cider that shall be produced at the exhibition in 1838, made within the county, a premium of fifteen dollars.
For the second, eight dollars.

REMARKS.

If the cider offered is found worthy of the *first* premium, it will be taken to be used at the table, without any additional payment. The claimant must furnish the committee with a statement in writing, of the entire process of making and preserving the cider.

XV. CULTIVATION OF WHEAT, RYE, OATS, BARLEY, AND BUCK WHEAT.

1. For the best conducted experiment of *Wheat*, on not less than one acre of land, ten dollars.

2. For the best conducted experiment of *Rye*, on not less than one acre of land, ten dollars.

3. For the best conducted experiment of *Oats*, on not less than one acre of land, ten dollars.

4. For the best conducted experiment of *Barley*, on not less than one acre of land, ten dollars.

5. For the best conducted experiment of *Buck Wheat*, on not less than one acre of land, ten dollars.

A statement of the produce, the manner of preparing the ground, the seed, harvesting, &c., including all the details in relation to the crop, &c., will be required to be handed to the Committee.

XVI. ANIMALS TO BE PRODUCED AT THE EXHIBITION, AT TOPSFIELD, ON THURSDAY SEPTEMBER 27, A.D. 1838.

For the best ox, fatted within the county, regard being had to the manner of feeding and the expense thereof, fifteen dollars.

For the second do. ten "

" the third do. five "

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the county, at least nine months from the day of exhibition, ten dollars.

For the second best, five dollars.

For the best milch cow, not less than three nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk, and the manner in which she has been fed, ten dollars.

For the second do. seven dollars.

" the third do. five dollars.

For the best heifer, that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, seven dollars.

For the second do. five dollars.

For the best pair of working oxen, taking into view their size, power, and the manner in which they have been trained, ten dollars.

For the second do. seven dollars.

" the third do. five dollars.

For the best pair three years old steers, taking into view their size, power, &c. seven dollars.

For the second do. five dollars.

For the best pair of two years old steers, taking into view their size, power, &c. six dollars.

For the second do. four dollars.

For the best pair of yearling steers, taking into view their size, power, &c. four dollars.

For the second do. two dollars.

For the best bull calf, 4 months old, three dollars.
For the second do. two dollars.
" the best pair of steers, do. three dollars.
" the second do two dollars.
" the best heifer do. three dollars.
" the second do. two dollars.
For the best boar, five dollars.
For the second do. two dollars.
" the best breeding sow, five dollars.
" the second do. three dollars.
For the best litter of weaned pigs, not lesss than *four*, from two to six months old, six dollars.
For the second do. three dollars.

XVII. HORSES.

For the best horse raised in the county, not less than three nor more than five years old,
ten dollars.
For the second do. eight dollars.
" the third do. six dollars.
" the fourth do. four dollars.

XVIII. TEAMS OF WORKING OXEN.

For the best team of working oxen, not less than forty pair, belonging to one town, that shall be exhibited between 12 and 2 o'clock,
twenty dollars.

☞ If these teams should come more than *six miles*, the expense of their feed will be paid in addition to the premium.

XIX. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.

The second best, do. do. three dollars.

For the best piece of stair carpeting, not less than twenty yards to be exhibited, three dollars.

For the best straw or grass bonnet, five dollars.

The second best do. three dollars.

For the best wrought hearth rug, having regard both to the quality of the work and the expense of the material, three dollars.

The second best do. two dollars.

For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, five dollars.

The second best do. three dollars.

For the best piece of flannel, a yard wide, and twenty yards in quantity, four dollars.

The second best, do. do. two dollars.

For the best wrought woolen hose, not less than four pair, two dollars.

The second best, do. one dollar.

For the best men's half hose, not less than four pair, one dollar.

For the best silk hose, not less than three pair, two dollars.

For the best piece of linen cloth, not less than twenty yards, four dollars.

The second best do. two dollars.

For the best piece of linen diaper, not less than twenty yards, three dollars.

The second best do. two dollars.

For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.

The second best do. two dollars.

For the best specimen of wrought lace, three dollars.
The second best, two dollars.
For the best specimen of work performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.
The second best do. two dollars.
And should any other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded.

XX. FRUITS AND FLOWERS.

A convenient room will be furnished for the exhibition of Fruits and Flowers, and a Committee will be appointed to examine and report upon the same. All who are interested in improving the horticulture of our county, are invited to lend their aid to this part of the exhibition, which it is hoped will be charming to the eye, and delicious to the taste.

XXI. LIVE FENCES.

The Trustees, with a view to encourage the cultivation of Hedges, or Live Fences, as in many cases most important, and, when, in good condition always useful, economical, and ornamental, have determined to offer premiums as follows:
For the best cultivated Hedge or Live Fence of any kind, of not less than five years growth from the

seed, and at least twenty rods in length, well trimmed and filled, a premium of twenty dollars.

For the next best, under the same conditions, a premium of ten dollars.

REMARKS.

In many parts of the county, stones are found in sufficient quantities to fence the land; and the laying them up in fences is the best way of disposing of them on their removal from the soil. But there are other parts, where stones are not obtained without much expense, where wood for fencing is scarce, where live fences might be introduced with great advantage.

Prejudices exist against the American Maple Thorn and the English Hawthorn, from their liability to be injured and destroyed by the borer, and to suffer greatly from the ravages of field mice. A hedge of the latter plant, however, is still to be seen on the farm late Dr. Shurtleff's, on the Salem Turnpike, near Chelsea Bridge, which furnishes a handsome, healthy and impregnable fence. The triple thorned Acacia, though strongly objected to by some persons, has been cultivated for this purpose with considerable success by Judge Buel, at Albany. But we have two plants among us, whose value and fitness in this matter have been tested, which are accessible, and subject to no disease or depredation.

The first is the Buckthorn, easily raised from the seed, of which a beautiful, durable, and sufficient fence, may be seen on the farm of E. H. Derby, Esq., in South Salem.

The other is the common red cedar, a savin, which abounds among us, and which is considerably used for fencing in some parts of Virginia and Pennsylvania. A hedge of this plant, neatly trimmed and impregnable by cattle, encloses the garden at Mount Vernon; and at seven years from the seed was a

sufficient protection against cattle. The plants were set about eighteen inches asunder; and the lower branches left uncut and encouraged to interlock with each other. It would not be advisable to trim it until it had obtained considerable growth. One great difficulty in the way of its cultivation, is in making its seeds germinate, as they are enclosed in a thick and impervious coat of a glutinous substance. It is necessary in this case to soak them in hot water, and then bruise them with a stone, so as to break this shell. They will then come up as readily as any other seeds. This is the experience and advice of Hon. Bushrod Washington, the successor of his revered uncle.

GENERAL REMARKS.

All claims for premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his agent, on or before 9 o'clock, A. M. of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

Claims for premiums on farms must be entered with the Secretary on or before the 20th of June, the present year.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to

increase the funds of the Society, and will not be paid after that time.

No animal, for which a premium has heretofore been awarded by this Society, will be entitled to another premium, unless it be of a higher order, and for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered; and *gives notice as required*, of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the *quality* of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly *superior quality.*

By order of the Trustees.

Attest: J. W. PROCTOR, *Sec'ry.*

JANUARY, 1838.

ON SILK.

[This Report on Silk came to hand too late to be inserted in its proper place.]

The Committee on Silk, &c. respectfully REPORT: That three specimens were exhibited. One from Mr. Isaac Stevens of Newburyport, of sewing silk manufactured from cocoons, which the committee consider as highly creditable to the skill of Miss Griffin by whom it was done, and most cheerfully recommend a gratuity of five dollars.

The second from Joshua Tappen, of Newbury, a specimen of three bushels of cocoons, some of which has also been manufactured into sewing silk. The committee regard Mr. Tappen as entitled to the countenance of the Society for the perseverance manifested in bringing the cocoons to maturity and for the good management which must have been used to have secured so much success in his first efforts in the business of producing silk, and recommend a gratuity of three dollars.

The third was a small specimen of cocoons raised by Miss Sarah C. Perry, of Bradford, characterized by unusual fineness, a gratuity of one dollar is proposed.

The Committee are pleased with the attention which continues to be paid to this interesting part of Manufacture, notwithstanding the unfavorable effect which the past seasons have had upon the Mulberry Trees, and the consequent discouragement which has come in upon this enterprise, and hope that a change in the seasons, or some discovery which may protect the Mulberry, in common with many of the fine and ornamental trees, from the blast which has been spreading over them, may soon give a new impulse to those engaged in it, and that the profits may

be equal to the skill and industry of those who seek their wealth in this highly interesting employment.

In behalf of the Committee.

J. H. DUNCAN, *Chairman.*

NAMES OF NEW MEMBERS.

In 1837.

EBENEZER G. BERRY, *of Danvers.*
WILLIAM BLACK, *of* "
MOSES BLACK, Jr, *of* "
RICHARD T. JAQUES, *of Newbury,*
JOHN S. FOSTER, *of Andover.*
AUGUSTUS L. FORESTIER, Esq., *of Batavia.*

Note. Any citizen of the County can become a member of the Society, by paying to the Treasurer the sum of *three dollars.*

OFFICERS OF THE SOCIETY.

Elected September, 1837.

JAMES H. DUNCAN, *of Haverhill,* President.

HOBART CLARK, *of Andover,*
DAVID CUMMINS, *of Salem.*
SOLOMON LOW, *of Boxford,*
DANIEL ADAMS, 3d, *of Newbury,*
} Vice-Presidents.

ANDREW NICHOLS, *of Danvers,* Treasurer.

JOHN W. PROCTOR, *of Danvers,* Secretary.

TRUSTEES.

Stephen Barker, *of Andover.*
Andrews Breed, *of Lynn.*
Michael Brown, *of Ipswich.*
Jeremiah Colman, *of Newburyport.*
Nathaniel Felton, *of Danvers.*
Daniel Fuller, *of Middleton.*
Moses French, *of Salisbury.*
Edward Ford, *of Beverly.*
Frederick Howes, *of Salem.*
Nathan W. Hazen, *of Andover.*
William Johnson, Jr., *of Andover.*
Amos Kimball, *of Boxford.*
Joseph Kittredge, *of Andover.*
Daniel P. King, *of Danvers.*
R. A. Merriam, *of Topsfield.*
Richard Jaques, *of Newbury.*
Moses Newell, *of W. Newbury.*
Daniel Putnam, *of Danvers.*
Dean Robinson, *of W. Newbury.*
John B. Savory, *of Rowley.*
Amos Sheldon, *of Beverly.*
Jeremiah Spofford, *of Bradford.*
Bowman Viles, *of Lynnfield.*
Erastus Ware, *of Marblehead.*

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